

# Beyond Altruism: Sociological Foundations of Cooperation and Prosocial Behavior

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Annu. Rev. Sociol. 2015. 41:43–63

First published online as a Review in Advance on  
April 29, 2015

The *Annual Review of Sociology* is online at  
soc.annualreviews.org

This article's doi:  
10.1146/annurev-soc-073014-112242

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## Keywords

norms, status, reputation, networks, social dilemmas, collective action

## Abstract

In explaining the sources of cooperation and prosocial behavior, psychologists, behavioral economists, and biologists often focus on factors internal to the individual, such as altruistic motivations, other-regarding preferences, and prosocial emotions. By contrast, sociologists typically emphasize social forces external to the individual, including norms, reputation systems, and social networks. Here we review evidence for these rules, reputations, and relations, showing that they have powerful and pervasive effects on cooperation and prosocial behavior. Our discussion highlights two emergent themes of the reviewed literature. First, although these classes of sociological mechanisms typically promote cooperation, their presence can also create ambiguity for individuals regarding the reasons for their own and others' prosocial acts, and that ambiguity can undermine future prosociality in subsequent settings where the mechanisms are absent. Second, altruistic preferences and social mechanisms often interact, such that the causal significance of altruism is attenuated where these mechanisms are present.

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**Social dilemma:**

a situation in which individuals' self-interested behaviors lead to collectively suboptimal outcomes; synonymous with collective action problem

**Cooperation:**

an individual behavior that benefits a group or collective

**Trust:** an individual's expectation that an alter will act in a benign or cooperative way when the alter has an incentive to act otherwise

**Prosocial behavior:**

an individual behavior that benefits one or more others

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## INTRODUCTION

Why do people cooperate in situations in which they could benefit more through selfishness? Why do people behave generously, often making great personal sacrifices in order to help others? Why do people behave in trustworthy ways, when they could profit more by exploiting dependent partners? In situations such as these an opposition exists between what is best for one-self versus what is best for others. Because of the fundamental nature of that conflict—reflecting the often divergent consequences of egoism and sociality—answers to these questions offer important insights into understanding the microfoundations of social order.

Conflicts between individual self-interest and collective rationality are not only fundamental, but also ubiquitous, as these tensions appear frequently in the course of everyday social life. Examples of such social dilemmas range from mundane to world-changing; individuals face these conflicting interests as they develop committed romantic relationships, form productive workplace collaborations, and broker economic exchanges. At the macro level social dilemmas also must be overcome as nations negotiate trade agreements, citizens mobilize political movements, and nations confront global challenges such as climate change. In all these cases, cooperation is plagued by a fundamental and recurring conflict, with the prospect of group harmony and productivity pushing parties together, but greed and distrust pulling them apart. Groups can flourish if their constituent members move beyond narrow self-interest, achieve mutual trust, and invest in collective endeavors. But groups can also founder where individuals fail to overcome these obstacles.

Although rooted in philosophy, all the social sciences have confronted the Hobbesian problem of order, with each offering characteristic solutions. Where political scientists have traditionally emphasized the role of government and formal institutions, economists have focused on the functions of markets and competition, and psychologists have studied altruistic motivations and emotions such as empathy and gratitude. By contrast, sociologists have emphasized informal, interpersonal mechanisms such as relationships, norms, hierarchies, shared values, and solidarity.

A large and prominent literature on social dilemmas, emphasizing the impact of individual-level factors on cooperation and prosocial behavior, has recently emerged in psychology (e.g., Batson 2011), behavioral economics (Gintis et al. 2003), and evolutionary biology (Sober & Wilson 1999). For instance, developmental psychologists (e.g., Eisenberg et al. 2002) have linked variation in prosocial behavior to personality and prosocial emotions, such as empathy and sympathy. Arguably, the most active and long-standing research program on individual-level predictors of cooperation and prosocial behavior has dealt with social value orientations, stable preferences for how valued outcomes are divided between oneself and others (Balliet et al. 2009, van Lange et al. 2014). In this literature, prosocials place greater weight on others' welfare than do proselves and thus are more likely to act prosocially in a range of domains. Related work, mainly from behavioral economics, has distinguished strong reciprocators—those inclined to cooperate with others and punish those who do not—from their more self-interested counterparts (Fehr & Gintis 2007; cf. Eriksson et al. 2014).

Whereas these literatures typically locate the sources of cooperation and prosocial behavior within individuals—in personality, emotions, motivations, and preferences—sociological work views cooperation and prosocial behavior as heavily impacted by factors outside individuals. Of particular note, sociologists have focused on (a) prevailing norms and their enforcement, (b) the perceptions and rank of individuals in groups, and (c) the character and structure of relations connecting individuals. These uniquely interpersonal mechanisms—rules, reputations, and relations—are the focus of our review.

## SOCIOLOGICAL MECHANISMS OF SOCIAL ORDER

How much cooperation would we observe on the basis of altruistic motivations and preferences alone? How generously would people act if they were not socially embedded, but placed in anonymous, decontextualized settings devoid of relationships or norms, with only their trust and concern for strangers to motivate their prosociality? Although behavior in such a social vacuum might seem impossible to realize, in fact we have some insight into it in the form of laboratory experiments on social dilemmas, in which people interact with anonymous strangers in settings where all participants must choose between maximizing their own or the group's welfare.

And what happens in this social vacuum? The strong tendency in these settings is for costly contributions to collective endeavors to begin at moderately high levels but then quickly decline over time as more generous individuals withdraw their contributions to avoid exploitation from their more selfish counterparts (Ostrom 2000, Sell & Wilson 1991). Although often criticized as artificial, experiments in which social context is deliberately minimized in fact tell us much about society. At the most basic level, the results of these studies in decontextualized settings tell us that something else is necessary, that high levels of cooperation cannot be sustained merely on the basis of the preferences and generalized trust that people carry around within them. Rather, the micro-level manifestations of social order—cooperation, trust, and prosocial behavior among individuals—require also the operation of mechanisms embedded in social settings. They are more than the direct products of individuals' altruism.<sup>1</sup>

The review that follows presents evidence for three broad classes of social mechanisms—rules, reputations, and relations—and how they can promote cooperation and prosocial behavior. Mechanisms of this sort are critical for understanding the foundations of social order because individual-level factors are likely insufficient for large-scale collective efforts, building and maintaining trust and trustworthiness, controlling rates of antisocial behavior, and encouraging helping and volunteering. We conclude by highlighting two themes that emerged from our review. First, these mechanisms operate primarily by bringing the behaviors of more self-interested individuals in line with group goals. Second, because it is often unclear whether these actions are produced by underlying motivations or social mechanisms, these mechanisms introduce ambiguity regarding the motivations of individuals who cooperate or behave prosocially. Thus, although social forces are critical for fostering high levels of cooperation, their presence also creates significant uncertainty about whether that cooperation results from internal motivations or external influence. In this way, individuals implicitly trade much of their ability to accurately discern their own and others' character in return for more reliable, harmonious, and productive group living.

## RULES

Perhaps no concept has been as closely linked with sociology as norms. Norms were central to early sociological theories of social order and especially prominent in the work of Durkheim [1982(1895)], who viewed norms and the sanctioning of counternormative behavior as central to moral order and social solidarity. But the field has maintained a discontented relationship with the concept of norms for decades, as exemplified by Wrong's (1961) critique of the "oversocialized" model of the actor that predominated mid-twentieth-century sociology. Although interest in norms fell out of favor partly with the demise of structural functionalism, norms and their

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**Trustworthiness:** an individual's motivation to honor, rather than exploit, another's trust

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<sup>1</sup>Many laboratory studies of cooperation take exactly this tack, introducing mechanisms thought to impact behavior in real-world contexts into a highly controlled setting in order to rigorously assess their isolated effects. We review several studies of this type below.

enforcement are once again central to the explanation of cooperation and prosocial behavior in sociology and beyond.

Broadly speaking, norms may be categorized as either descriptive or injunctive (Cialdini et al. 1990). Descriptive norms are simply regularities of behavior, what most people do in a given situation, whereas injunctive norms are behavioral expectations that are backed by (social or material) sanctions. Research shows that descriptive norms can have large effects on prosocial behavior. For example, a field experiment by Schultz et al. (2007) found that providing households with information about typical levels of electricity usage for their neighborhood led households to assimilate to the perceived norm in the weeks that followed. Other field experiments show that descriptive norms can spill over to impact behavior in other, associated domains. Keizer et al. (2008) found that when a descriptive norm violated a corresponding injunctive norm, such as when graffiti or the sounds of illegal fireworks were prevalent in a public space, passersby were more likely to violate other social rules, such as prohibitions against littering and theft. Thus, mere perception of what is typical is sufficient to shape whether individuals engage in prosocial or antisocial behavior.

## **Norm Enforcement**

Most recent work on how norms impact cooperation has focused on injunctive norms, especially when and why people enforce them (Benard 2012, Horne 2009). Some of this research, traceable to Hobbes, focuses on formal, or top-down, mechanisms of norm enforcement, whereby a centralized authority or institution administers rewards or punishments to group members (Hechter 1988). But the bulk of recent research has focused on bottom-up, informal sanctions among peers (Horne 2009). Although top-down and bottom-up enforcement mechanisms differ in fundamental ways (see Kitts 2006), the administration of either generally poses its own social dilemma, or second-order free rider problem (Oliver 1980): Rational egoists would prefer to let others shoulder the costs of establishing and maintaining the sanctioning system or of informally monitoring and sanctioning fellow group members. Thus, the enforcement of cooperative norms can itself pose a collective action problem.

Early experiments by Yamagishi (e.g., 1986, 1988) found that people facing a collective action readily contribute to the provision of a centralized system designed to sanction noncontributors. Similarly, Ostrom et al. (1992) studied peer sanctioning in the context of common pool resources, finding that people were willing to pay to punish fellow group members who free rode and that these sanctions increased cooperative behaviors, especially when coupled with verbal communication between group members, a point we return to below. More recent work in behavioral economics (Fehr & Gächter 2002) extends these earlier findings, showing that people are willing to take on material costs to sanction others even when there is no possibility of future interaction. The key message of this line of research is that people are willing to pay to reward those who contribute and punish those who do not (for reviews, see Fehr & Gintis 2007, Shinada & Yamagishi 2008). Thus, groups can readily overcome the second-order free rider problem that characterizes norm enforcement.

At first blush, this empirical research on norms and enforcement might appear in line with classic sociological claims that the presence of norms necessarily goes hand in hand with high levels of cooperation. Yet there are important limits to norms and sanctions for collective welfare. First, norms might persist even when group members no longer privately support them, as shown by research on pluralistic ignorance (Prentice & Miller 1993). The stability of such unpopular norms can be sustained in part by false enforcement processes, in which group members not only conform to a norm they perceive to have popular backing, but also enforce conformity to the norm in an effort to signal the sincerity of their compliance (Centola et al. 2005, Willer et al.

2009). Further, norms may emerge that support self-interested rather than cooperative behaviors (Homans 1974, Kitts 2006, Miller 1999). There is even evidence that group members will punish or ostracize those who give above normative levels (Herrmann et al. 2008, Irwin & Horne 2013, Parks & Stone 2010). Finally, peer sanctions may be difficult to coordinate and can therefore result in either more or less sanctioning than is necessary to discourage further noncooperation, or they can spark cycles of recrimination as punishment is met with retaliatory counterpunishment (Nikiforakis 2008). As a result of these costs, material sanctions between peers can lead to relatively low increases in overall welfare.

## **Emergence of Norms**

Findings regarding the negative effects of sanctions pose an interesting puzzle. As Ostrom (2000, p. 138) notes, “in all known self-organized resource governance regimes that have survived for multiple generations, participants invest resources in monitoring and sanctioning the actions of each other so as to reduce the probability of free riding.” But how can this be so if peer sanctioning systems pose all the problems just described? Part of the answer to this puzzle can be discerned from important differences in how researchers have typically studied norm enforcement versus how norms emerge and become enforced in real-world groups.

First, in real-world collective action groups, norms and expectations generally emerge via communication among group members (Ostrom 2000). Meta-analyses show that communication greatly increases cooperation in collective action settings (Balliet 2010, Sally 1995). One reason communication is so important is that it allows group members to create collective expectations about who should do what (e.g., how much members should contribute) and the consequences for not meeting, or exceeding, those expectations (including punishments or rewards and who should administer them). As evidence, Ostrom et al. (1992) found that the ability to punish fellow group members yielded only marginally better outcomes than a control condition, once sanctioning costs were taken into account. But groups who could communicate fared substantially better, both when peer punishment was possible and even, to a somewhat lesser extent, when it was not. Communication permitted group members to coordinate expectations about how much each should contribute and, in cases where sanctions were possible, how much those who did not meet the group’s expectations would be sanctioned. Other work addresses the collective selection of particular institutional rules in collective action groups (Eriksson & Strimling 2012, Sutter et al. 2010). Consistent with evidence from field work by Ostrom and colleagues, these studies find that institutions are more effective when they emerge endogenously via the choices of group members.

## **Centralized Sanctions and Leadership**

In contrast to most recent experimental studies of norms and sanctions, real-world collective action groups generally place restrictions on who can punish whom for violating norms (e.g., Ostrom 2000). For instance, the responsibility for monitoring and sanctioning others’ behaviors might be alternated among group members (O’Gorman et al. 2009) or based implicitly on who has more power or influence in the group (e.g., Przepiorka & Diekmann 2013). Perhaps most commonly, the ability to sanction others’ behaviors is often vested in an explicitly designated leader (van Vugt & De Cremer 1999).

A recent lab-in-the-field experiment addressed the effectiveness of elected or appointed leaders endowed with the power to impose costly sanctions on group members (Grossman & Baldassarri 2012). Results showed that group monitors willingly sacrificed their own endowments to sanction

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**Trusting behavior:**

acting in a way that leaves one open to exploitation by another

**Trustworthy**

**behavior:** acting in a cooperative way toward another when one has an incentive to do otherwise

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group members, even though the monitors' welfare was not tied to cooperation levels in the group. Consistent with theories of legitimacy (Johnson et al. 2006) as well as field research on collective action groups (Ostrom 2000), how monitors came to occupy the role affected their effectiveness. Elected monitors were most effective at garnering contributions, as group members responded more strongly to sanctions meted out by elected rather than appointed monitors. More generally, placing sanctioning capacity in the hands of a single group member facilitated the success of collective action while avoiding problems with peer sanctioning, such as the coordination of punishment and retaliatory sanctioning.

## How Institutions Can Undermine Trust and Prosocial Motivations

The above research shows that although norms and sanctions are not always functional, they often play an important role in promoting cooperation and prosocial behavior in groups. Moreover, prior work finds that norms and institutions are generally more effective when they emerge endogenously and in settings where enforcement responsibility is centralized. But rules and institutions can also undermine cooperation in groups, by weakening prosocial values or even altering cultural conceptions of what is considered moral or prosocial. As Bowles (2008) argues, institutions or "policies designed for self-interested citizens" might actually end up creating self-interested citizens. This can happen via a number of different mechanisms. For instance, institutions that invoke extrinsic incentives for prosocial behavior alter individuals' perceptions about what motivates others, inadvertently signaling that self-interest is normal. Such consequences have been demonstrated in response to the use of contracts. Although contracts reduce the risk inherent in many types of exchanges, they can also lead parties to inaccurately attribute an exchange partner's benign behavior to the contract itself. Once the contract is removed, studies find that trust is lower than it would have been had there never been a contract (Malhotra & Murnighan 2002).

The damaging effects of contracts are not limited to trust. Laboratory experiments have found that, compared with participants who were never engaged by contracts, those who first took part in contractually backed exchanges were more likely to exploit the trusting behaviors of new partners in subsequent interactions not governed by contracts (Kuwabara 2015, Simpson & Eriksson 2009). The researchers attribute this effect to a self-perception dynamic (Bem 1972), whereby a person attributes one's own trustworthy behavior to the presence of the contract, leading to less trustworthy behavior once the external constraint is removed. More generally, incentivizing prosocial behavior via the use of rewards or punishments to condition certain behaviors can undermine intrinsic motivation.

Other research considers the impact of more macro-level institutions and organizations on prosocial behavior. Much of this work deals with whether and how markets undermine civic virtues and other-regarding preferences, a long-standing question in sociology (Fourcade & Healy 2007). In his classic comparative study of blood donation in Britain and the United States, Titmuss (1970) argued that monetary compensation for donations might paradoxically reduce the available supply by undermining prospective donors' intrinsic motivations to give blood. A field experiment partially supports Titmuss's hypothesis (Mellström & Johannesson 2008). Frey & Oberholzer-Gee (1997) found similar effects in their study of Swiss villages that were being considered as potential nuclear waste repository sites. When no compensation was offered, just over half of villagers indicated a willingness to accept the site, despite widely perceived hazards. But when the villagers considered the prospect of compensation for hosting the facility, consent dropped by half. In this way, civic duty was undermined when it was framed as purchasable.

A provocative and unusual demonstration of how markets can erode moral conduct comes from a recent experiment by Falk & Szech (2013). Relative to a control condition in which individuals



made independent decisions, participants who engaged in competitive market interactions were more willing to allow a healthy mouse to be killed as a consequence of an exchange. The authors conclude that the undermining of moral behavior may stem partly from the information markets convey about social norms. Specifically, witnessing other market participants pursue their own self-interest at a cost to others' welfare communicates that egoism is normative.

Economic sociologists have also studied how market norms and institutions frame the morality of a given behavior and can thereby alter cultural conceptions of what is moral or immoral (Fourcade & Healy 2007). Zelizer's (1983) classic study shows how the insurance industry successfully transformed the perceived meaning of life insurance, once viewed by the public as morally repulsive, into a moral responsibility to loved ones. Healy (2000) traced the large variation in blood donation in EU countries to international differences in collection regimes. Like Titmuss (1970), Healy concludes that the ways organizations frame the act of giving blood impact donors' motivations for giving. For instance, those who give to state collection regimes might interpret their donation as *quid pro quo* for benefits received from the state health system, whereas those who donate via the Red Cross may view their donation in more altruistic terms, since donors are often recruited via religious and volunteer organizations. Along similar lines, Almeling (2007) finds egg donor agencies are more likely than sperm banks to frame donation in terms of altruism, despite the much greater monetary compensation given to egg donors. Further insights into how market norms and broader institutions impact prosocial values and behaviors are likely to be forthcoming as sociologists increasingly turn their attention to morality and how it intersects with economic life (Fourcade & Healy 2007, Hitlin & Vaisey 2013).

## REPUTATIONS

In the last decade, perhaps no mechanism promoting cooperation and prosocial behavior has received as much attention as reputation. Once viewed as secondary to material incentives, the reputational rewards that go to those who behave in generous or cooperative ways are now also viewed as a powerful force shaping prosocial action. Researchers generally conceive of reputation as the "set of judgments a community makes about the personal qualities of one of its members" (Emler 1990, p. 171). Here we are particularly concerned with reputational judgments with moral content, specifically judgments of a person's cooperativeness, trustworthiness, or generosity. Status, on the other hand, is generally defined as a person's relative standing in a hierarchy based on prestige, honor, and respect (Thye 2000). Note that these concepts are overlapping but distinct. For instance, whereas status researchers generally focus on prestige hierarchies in which individual rank is relative (Sell 1997, Willer 2009), a person's reputation as more or less prosocial need not be relative and thus may not necessarily impact the reputations of fellow group or community members (though see Barclay & Willer 2007). Here we review work on cooperation and reputation before turning to recent work on status.

### Prosocial Reputations and Reputation Systems

Research has documented a great array of benefits that accrue to those with prosocial reputations, finding that such individuals are trusted more (Barclay 2004), are respected more (Hardy & van Vugt 2006, Willer 2009), are cooperated with more (Barclay 2004, Willer 2009), have more influence (Willer 2009), and are disproportionately selected as exchange partners (Barclay & Willer 2007) and group leaders (Milinski et al. 2002). In online markets, such as eBay, those who are known to be reliably cooperative can command higher prices for their items (Diekmann et al. 2014). Consistent with the many benefits that accrue to those with a prosocial reputation,

research finds that prosocial behavior increases dramatically where reputational rewards are possible (Barclay & Willer 2007). Indeed, recent work shows that children as young as five years old engage in prosocial impression management, acting more generously when they can develop a good reputation for doing so (Engelmann et al. 2013).

The impact of reputational considerations on prosocial behavior is also well established in the ethnographic literature (Mauss 1922, Smith & Bird 2000) as well as in studies of social movements (Jasper 2011). Chong (1991), for instance, views reputational concerns as an often critical impetus for participation in the high-risk Freedom Rides of the civil rights movement. Moreover, contributions to other types of large-scale cooperative endeavors, such as online marketplaces and open-source software communities, are driven in large part by contributors' reputational motivations (Anthony et al. 2009, Smith & Kollock 1999). Field experiments on energy conservation (Yoeli et al. 2013) and longitudinal studies of blood donors (Lacetera & Macis 2010) have documented similar effects, finding that prosociality increases when behaviors are public. These studies illustrate how much the prospect of reputational gain, and conversely the threat of loss, serves to promote cooperative and prosocial behaviors.

### **Establishing Reputation Systems**

Just as with sanction-backed norms, the ubiquity of reputation systems poses a theoretical puzzle. Many reputation systems can be viewed as public goods, valuable sources of information generally available to anyone, whether or not one has contributed to them (Smith & Kollock 1999). Thus, the provision of reputational information is in essence the production of a public good, and therefore the existence and maintenance of reputation systems should not be taken for granted. After all, offering feedback about one's experience with a trader in an online marketplace, or gossiping about a group member's bad behavior, often takes time or effort while also risking retaliation.

Despite this, a number of studies have found that individuals readily share reputational information about those with whom they have interacted. For example, a study of eBay transactions found high levels of contributions to its reputation system, with 60–80% of buyers leaving feedback about sellers (Diekmann et al. 2014). The authors concluded from their analyses of feedback patterns that the ratings were motivated in part by other-regarding preferences. Other work is consistent with this claim, showing that, when spreading reputational information could protect others from exploitation, people readily share information about prior exchange partners via gossip, even suffering costs to do so (Feinberg et al. 2014). This work further finds that such prosocial gossip was engaged in most frequently by more altruistic individuals, for whom spreading gossip reduced stress they felt upon learning of an individual's prior antisocial behavior. Beyond these altruistic motives, contributions to reputation systems can also be guided by enlightened self-interest, as leaving a positive review of one person can lead to reciprocation by the subject of the review (Resnick & Zeckhauser 2002). It also seems likely that those who participate in the creation and maintenance of reputation systems may also receive reputational benefits, but we are not aware of any work addressing this.

We thus know that people contribute to reputation systems, but another puzzle is why these systems are so effective in communities with high mobility and very low chances of repeated interactions, such as online markets. After all, these marketplaces do not generally prevent sellers with unscrupulous reputations from wiping their slates clean by forging a new identity, and then moving on to exploit more unsuspecting buyers. Under such circumstances, the absence of a negative reputation is of little value in deciphering which traders to avoid. Positive reputations, on the other hand, provide much more useful information about prospective partners' trustworthiness, since they are built on a history of cooperative interactions. Experimental simulations of



market exchanges by Yamagishi et al. (2009) confirm that when traders can reestablish identities, positive (or mixed) reputation systems promote higher levels of honesty in transactions compared with purely negative reputation systems. Thus, whereas negative reputation systems facilitate trustworthiness via the threat of exclusion from communities with fixed identities and highly embedded interactions, such as the wholesale diamond markets analyzed by Coleman (1988), positive reputations are likely to be more beneficial in systems such as online markets where nonembedded interactions are commonplace and interactants can strategically alter their identities.

### **Status Impacts Contributions to Collective Actions**

Whereas the work reviewed above focuses on reputations, a separate line of research has tied generosity (Flynn 2003) and the provision of public goods (Hardy & van Vugt 2006, Willer 2009) more specifically to status processes. For instance, Willer (2009) showed that those who contributed more to group efforts were subsequently accorded higher status by their group members. This higher status, in turn, increased their later contributions to the group via enhanced progroup motivation. These downstream effects of status on prosociality have also been demonstrated in the context of contributions to large-scale collective actions, such as **Wikipedia.org**, the online open-source encyclopedia. The quantity and quality of content on Wikipedia depend on voluntary contributions, but its content can be accessed by anyone, regardless of whether they contribute. A field experiment by Restivo & van de Rijt (2012) with Wikipedia users underscores the impact of status rewards in sustaining contributions among the most active contributors. Users can give volunteers barnstars, symbolic recognition for their prior contributions to the collective good. Restivo & van de Rijt found that random assignment of barnstars to high contributors resulted in increased subsequent contributions, consistent with Willer's laboratory experiment.

Status hierarchies in groups may help promote collective actions not only by affecting how much people give, but also by coordinating when they give. For instance, Simpson et al. (2012) built on insights from status characteristics theory to explain how extant status differences in groups influence collective action outcomes. They found that possessing higher relative status led participants to be more likely to initiate collective action by making costly contributions to group goals. Such early contributions by high-status actors tend to be relatively large (Sell 1997) and influence lower-status actors to follow through with higher contributions than they would have otherwise made (Eckel et al. 2010). Thus, via a sequencing and influence process, status hierarchies can attenuate both the start-up and free rider problems (Heckathorn 1996) associated with collective actions.

### **Limits and Liabilities of Status for Prosociality**

Many of the findings reviewed above support a functionalist account of status in groups. Indeed, a growing body of empirical work is consistent with the view that hierarchies facilitate group success by motivating individuals to sacrifice for group goals and by coordinating members' behaviors (Magee & Galinsky 2008). But as Anderson & Willer (2014) note in a recent assessment of the literature, hierarchies often form around group members' culturally defined beliefs about one another's status characteristics, e.g., that whites are more generally competent than African Americans or that men are more competent than women. To the extent that status is unrelated to task performance or expertise, status-based hierarchies will likely not promote—and may even stymy—group goals.

Moreover, when group hierarchies are zero-sum (Anderson et al. 2006, Blau 1964), individuals' status concerns can lead to interpersonal conflicts and/or low hierarchical consensus that can

undermine the group-benefiting effects of status hierarchies (Anderson & Willer 2014). Similarly, Kitts (2006) argues that when status rewards for group contributions are rival (and sufficiently valuable), norms may emerge that prescribe sanctioning those who contribute to collective efforts, consistent with research on antisocial punishment addressed above. Further clarification of the circumstances under which status concerns encourage group-benefiting contributions versus dysfunctional status conflicts and hierarchical dissensus is an important avenue for future research.

## RELATIONS

Social relations and network structure are key channels through which the mechanisms addressed thus far are realized. For instance, people can generally have reputations only if they are connected to others, directly or indirectly, through social networks (Emler 1990). Similarly, exposure to norms and sanctions depends on the strength and patterning of relations connecting individuals (Homans 1974, Horne 2009). However, relations and network structure are more than mere conduits through which other social factors flow to impact prosocial behavior. These aspects of social structure also have important effects of their own. Perhaps most obviously, social relations are frequently characterized by emotional commitment, feelings of moral obligation, interest in the partner's welfare, and reduced uncertainty about the other's likely behavior, all of which can promote prosociality within a relation. Additionally, where relations are expected to endure in the future, either for affective, structural, or other reasons, that expectation casts a shadow of the future on present interaction, reducing incentives for malfeasance (Axelrod 1984). Thus, positive social relations tend to attenuate problems of trust and trustworthiness that might otherwise stymy social and economic exchanges (DiMaggio & Louch 1998, Kollock 1994).

But research has increasingly demonstrated how networks impact prosociality beyond the qualities of dyadic relations. Recent work highlights how the structure of relations matters, with individuals' network location, the network distance between pairs of individuals, and diffusion dynamics, as well as properties of the network as a whole (e.g., density, dynamism) having important effects on prosociality. In the sections that follow, we move beyond individuals' immediate adjacencies, describing how cooperation and prosocial behavior are impacted by broader network structures and individuals' embeddedness within those structures.

### Distal and Indirect Effects of Network Relations on Prosociality

Although the highest levels of prosociality tend to occur within enduring positive relations, research also reveals important distal network effects in which prosociality is often extended to those to whom one is only indirectly connected. For instance, although Jews who were saved from the Nazi Holocaust were typically aided by people they knew, many rescuers were strangers. In the majority of such cases, the two were connected indirectly by an intermediary (Varese & Yaish 2000). More generally, studies of naturally occurring networks find that generosity decreases as the network distance between individuals increases, such that people are generous toward friends of friends, somewhat less so toward friends of friends of friends, and least generous toward more distal others or strangers (Apicella et al. 2012, Baldassarri & Grossman 2013, Leider et al. 2009).

Networks can also indirectly encourage prosociality through the spread of reputational information about others' trustworthiness through ties that connect group members (Buskens & Raub 2002) and by shaping levels of trust in strangers (Macy & Skvoretz 1998). As Dasgupta (1988,

pp. 64–65, cited in Glanville et al. 2013) notes, “in dealing with someone you learn something not only about him, but also about others in his society. You learn something about population statistics. Therefore, if you meet several honest persons and no dishonest ones you might want to revise your prior opinion of society at large.” Several studies (Glanville et al. 2013, Welch et al. 2007) support the claim that the development of interpersonal trust in cooperative relationships tends to generalize, promoting greater trust in strangers.

Other approaches to the diffusion of prosociality through networks are based in social exchange accounts of generalized reciprocity, in which an actor who receives benefits from one party does not directly reciprocate the benefactor but instead pays it forward by giving to a third party (Bearman 1997, Ekeh 1974, Takahashi 2000, Uehara 1990, Yamagishi & Cook 1993).<sup>2</sup> Research finds that generalized exchange systems featuring this form of reciprocity can foster high levels of solidarity (Molm et al. 2007, but see also Lawler et al. 2008), provided they achieve sufficient levels of productivity (Willer et al. 2012). Further, once achieved, group solidarity can propel group members’ subsequent costly contributions to such systems (Willer et al. 2012).

That individuals tend to pay generosity forward, responding to acts of kindness by subsequently behaving more generously with third parties, is supported by both field and laboratory experiments conducted in a variety of cultural contexts (Tsvetkova & Macy 2014, Willer et al. 2014b). In addition to unilateral giving behaviors, other work establishes how contributions to public goods can cascade through networks, influencing the behaviors of people two and even three degrees removed from the original contributor (Fowler & Christakis 2010).

Although these studies show that prosocial behavior diffuses through social network ties, our knowledge of how the structure of relations in networks can amplify or attenuate these effects remains limited. Linking micro-level understandings of factors that promote prosociality with features of network structure is an important direction for future research.

## Network Integration and Network Structure

Most studies that address how prosociality varies with structural location focus on actors’ centrality in a network. Even controlling for social distance, researchers find that individuals who are more central are more generous to fellow group members (Brañas-Garza et al. 2010) and contribute more to collective efforts (Baldassarri 2014). But why are network centrality and prosociality positively related? It may be that more altruistic and cooperative types become more central in the network, consistent with research reviewed above on the reputational benefits of prosociality. Alternatively, high centrality may lead actors to behave more prosocially, perhaps because of their greater visibility. The correlation between prior behavior and reputation tends to be strongest for more popular or central group members (Anderson & Shirako 2008). Thus, the potential reputational rewards and costs for acting prosocially (or failing to do) may be greater for more central actors. Finally, being more centrally located in a group’s network is associated with higher levels of commitment to the group (Paxton & Moody 2003), which can motivate sacrifice for the group and its members. Thus, existing research largely leaves open whether network centrality is a cause of prosociality, a consequence, or both, making the identification of causal direction and underlying mechanisms an important goal for future work.

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<sup>2</sup>Whereas generalized reciprocity occurs when an actor who receives benefits or helps a third party in turn (*you help her because I helped you*), indirect reciprocity occurs when an actor who gives benefits to another is subsequently helped by a third party (*she helps you because you helped me*). Indirect reciprocity is driven by the reputation processes discussed above, in which those who act prosocially develop prosocial reputations and, as a consequence, are helped by others when the need arises.

Moving beyond an individual's location in the network, other work has addressed how properties of the larger social network influence network-wide rates of cooperation (Rand & Nowak 2013). This research finds that dynamic networks in which ties can be added or deleted tend to facilitate cooperation (Jordan et al. 2013, Rand et al. 2011).<sup>3</sup> The ability to form new ties increases the incentive to cooperate in order to attract new partners, consistent with work on reputations discussed above. Similarly, the ability to shed ties to defectors promotes the formation of clusters of cooperators.

A separate line of research addresses the impact of interpersonal ties and network structure on contributions to collective actions. Formal models have addressed how the diffusion of contributions to collective action depends on the distribution of potential contributors' underlying propensity to join the effort based on the number of others who have already joined (i.e., their thresholds for adoption; Chwe 1999, Granovetter 1978), as well as the density of the network (Gould 1993, Marwell et al. 1988; for a review, see Oliver 1993). Depending on specific model parameters, researchers have found very different effects of network density. Macy (1991), for instance, finds that density can be detrimental to collective action because nonparticipation can more easily diffuse through the network. Kim & Bearman (1997), on the other hand, find that greater density has a positive impact on collective action because it increases communication and interpersonal influence between prospective contributors, and creates more favorable conditions for shared interest in the collective good. Although there are some mixed findings (see Passy & Monsch 2014), the empirical literature on social movements is largely consistent with the view that denser networks facilitate collective action success (e.g., McAdam 1986, Pfaff 1996).<sup>4</sup>

### **Drawbacks of Network Embeddedness for Prosociality**

We have so far focused primarily on the benefits of relations and networks for prosociality. But one of the most active research programs on trust points to conditions under which dense social networks can be detrimental to generalized trust. Most of this work derives from Yamagishi & Yamagishi's (1994) finding that collectivist (e.g., East Asian) cultures tend to be characterized by lower levels of generalized trust than individualist (e.g., most Western) cultures. Research reviewed above finds that the development of trust in personal relations can generalize to strangers. This may be because people tend to attribute a partner's cooperative behavior to benign intent ("He did not take advantage of me. He is a trustworthy person"). As the number of such positive interactions increases, a person may come to expect that others, in general, can be trusted. But Yamagishi & Yamagishi (1994) suggest that the development of generalized trust in this way is inhibited when such interactions are embedded within densely connected networks, because such networks are characterized by high levels of informal monitoring and sanctioning. Similar to the effects of formal contracts discussed above, monitoring and sanctioning in such networks provide assurance that one's cooperation is unlikely to be exploited. Because the sanctioning system is very salient in such network settings, others' cooperation is likely to be attributed to the system rather than to goodwill or benign intent ("He did not take advantage of me, since the business partners we have

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<sup>3</sup>Earlier work, although not framed in terms of network structure, also shows how the ability to enter or exit relations favors more cooperative strategies (Orbell & Dawes 1993, Yamagishi & Hayashi 1996).

<sup>4</sup>Scholars have called for greater specification of when and why social networks matter for social movements (e.g., Kitts 2000). As one example, it may be that network density facilitates recruitment into a social movement, as suggested by the Kim & Bearman (1997) model, but also leaves the movement vulnerable to cascades of departures, as might be suggested by the Macy (1991) model.

in common would have ostracized him had he done so"). Because benign behaviors are more apt to be attributed to structural factors than to benign intentions, densely connected networks are predicted to inhibit the development of generalized trust, compared with more sparsely connected networks.

Empirical tests of this structural account are largely indirect, because variation in network structure is generally assumed rather than measured. Nevertheless, a number of experiments (e.g., Yamagishi 1988) and surveys (Yamagishi & Yamagishi 1994) support the prediction that Japanese are less trusting of strangers than Americans are. More generally, a comparison of 31 nations found that collectivist cultures generally feature lower generalized trust (Gheorghiu et al. 2009). But again, none of these studies directly measures rates of interaction within densely connected networks. One effort to more directly test these claims found that higher rates of interaction with family members were associated with lower trust toward strangers (Ermisch & Gambetta 2010). But future research should attempt to establish clearer causal evidence, especially as it relates to cross-cultural differences in generalized trust.

## DISCUSSION

In contrast to other fields, sociological research on the forces shaping cooperation and prosocial behavior has focused almost entirely on factors external to the individual. Our review has focused on three classes of such social mechanisms—rules, reputation, and relations—found to encourage progroup actions. Research on rules shows the importance of social norms, both descriptive and injunctive, and sanctions for encouraging prosocial acts. Work in this area often finds that the organic, bottom-up emergence of norms and enforcement practices yields more effective institutions than those imposed from the top-down. Research also finds that the centralization of norm enforcement is typically more efficient than distributed enforcement systems, especially in settings where leaders emerge through processes viewed as legitimate. Among other benefits, centralized leadership circumvents the diffusion of responsibility for sanctioning that can plague decentralized sanctioning regimes. At the same time, research also shows that, precisely because sanctions encourage prosocial behavior, they can undermine both trust and intrinsic prosocial motivations by creating ambiguity around the underlying motivations driving one's own and others' prosocial acts.

Studies of reputation highlight the many benefits, including gifts, prestige, influence, and access to productive collaborative endeavors, that accrue to individuals who overcome narrow self-interest to behave prosocially. Consistent with this, prosocial acts are more common in situations that facilitate reputational benefits, for example, public as opposed to anonymous settings. Further, receiving reputational rewards for contributing to collective endeavors encourages greater giving in the future. However, work in this area does not find uniformly positive effects. For example, whereas reputation-based hierarchies often benefit groups by coordinating group efforts, hierarchies based on nonmeritorious factors such as ascriptive characteristics can undermine the functional effects of hierarchies.

Last, work on relations finds that a variety of properties of networks, and the location of individuals and relationships in them, shape prosocial behavior. Studies find that more generous individuals tend to be more centrally located in social networks. Relationships too are shaped by network properties, as dyadic giving diffuses across relationships via generalized reciprocity, and helping behavior is more likely between actors that are closer to one another in the network. Further, networks with high density and the dynamic capacity for actors to form and dissolve relationships also tend to feature greater cooperation. But here also research shows that this class of social mechanisms is not entirely functional for promoting cooperation. Specifically, research

suggests that dense networks featuring high levels of informal monitoring and sanctioning can undermine generalized trust, limiting the formation of productive, cooperative efforts among strangers.

### **Interaction of Person and Situation**

Here we have sought to balance the focus on mechanisms internal to the individual (e.g., preferences, altruism) common in behavioral economics and psychology by emphasizing the social factors external to individuals that are most often studied by sociologists. But an important question remains: How do these two classes of mechanisms coexist? On the one hand, it could be that both types of mechanisms operate in parallel, having simple main effects on prosociality and cooperation. On the other hand, another possibility is that they interact, with one somehow moderating the effects of the other.

Whereas our review emphasizes the main effects of social factors, several recent studies support the latter, interactional account. Specifically, research suggests that social mechanisms such as those reviewed here have their strongest effects on more egoistic individuals who, in their absence, would be less likely to behave prosocially. In lifting up the prosociality of more egoistic actors, these mechanisms transform the very heterogeneous underlying motivations of individuals into the more consistent, predictable, and benign behaviors we observe in public, social settings. For instance, Simpson & Willer (2008) find that the behaviors of persons classified *a priori* as altruists and egoists differ greatly in anonymous contexts, with altruists acting much more prosocially than egoists. But these differences largely disappear in public settings where prosocial behavior could lead to downstream monetary rewards, as egoists give much more generously in such settings than they would in private. Likewise, egoists are more affected by the threat of gossip, cooperating at higher rates when gossipers can pass on information about their behaviors to potential future interaction partners (Feinberg et al. 2012).

Willer et al. (2014a) report parallel patterns when rewards for prosociality are purely reputational with no downstream material consequences. They find that more egoistic individuals are more likely than their more altruistic counterparts to pursue enhanced social status, and the prospect of status gains lead them to act more prosocially. More altruistic people, on the other hand, tend to give at high levels whether or not status gains are possible. Finally, a number of studies show that, although more altruistic individuals act much more prosocially than egoists in one-off interactions with strangers, these behavioral differences largely disappear when actors are embedded in ongoing relations (e.g., Parks & Rumble 2001, Simpson et al. 2014, van Lange et al. 2011). This is because the “shadow of the future” increases egoists’ cooperation, by aligning cooperation with self-interest, but has less impact on altruists, who would be likely to cooperate regardless.

More generally, laboratory studies of socially decontextualized groups show that person-level factors alone are generally unable to sustain cooperation at the high levels observed in many human groups. As noted above, these groups initially show much variation in contributions, with more altruistic individuals giving at high levels and more egoistic people contributing little or nothing at all. Contributions of more altruistic individuals then decline over time in response to their egoistic counterparts’ noncooperation (Fehr & Gintis 2007, Sell & Wilson 1991). Thus, in the absence of social mechanisms—e.g., clear enforceable norms, opportunities to gain reputation or status for contributions to group efforts, or social connections between group members—contributions fall to very low levels. Considered alongside research just described on the interactive effects of personal and situational factors, the failure of cooperation in socially decontextualized groups suggests that although prosocial motivations help foster initial cooperation, they are generally



insufficient unless paired with social mechanisms. Further, these mechanisms seem to have most of their effects via their impact on more egoistic actors.

## **Social Mechanisms and Attributional Ambiguity**

Because social mechanisms lead self-interested individuals to behave prosocially in ways similar to the behavior of intrinsically motivated people, they can also introduce ambiguity about what motivates the prosocial behavior of others or even oneself. After all, unlike laboratory experiments, where intrinsic motivations can be isolated from extrinsic factors, social life rarely affords group members the opportunity to observe one another's behavior both when a given social mechanism is present and when it is not. As a consequence, people often must make attributions about what motivated another's behavior when that behavior could have resulted from intrinsic motivation to benefit the group, extrinsic factors, or some combination thereof. Similarly, we are all to some extent "strangers to ourselves" (Wilson 2009), lacking perfect insight into what motivates our behaviors. Individuals thus may sometimes misattribute behaviors that in fact stemmed from altruistic motivations to the presence of an extrinsic reward instead (e.g., Simpson & Eriksson 2009). Attributing others' behaviors to the presence of extrinsic motivators can reduce trust that others will cooperate in the absence of extrinsic motivators. Likewise, attributing one's own cooperative behaviors to extrinsic factors can undermine the likelihood that the individual will cooperate in their absence.

For each social mechanism discussed above, we described evidence for how it might also undermine cooperative outcomes, by eroding intrinsic motivations, raising suspicions of motivations underlying others' behaviors, or both. We noted, for instance, that the introduction of monetary sanctions can lead those who would otherwise be inclined to cooperate to behave less prosocially when the sanctions are removed (e.g., Bowles 2008). These sanctions can also reduce interpersonal trust by introducing ambiguity about why others are contributing to group goals (Mulder et al. 2006). Likewise, the presence of reputational rewards for prosociality can create uncertainty about whether others are giving out of altruistic motivation or the egoistic pursuit of reputational gain (Anderson & Willer 2014, Gambetta & Przepiorka 2014, Willer et al. 2014a). Last, we described theory and research showing that interactions within densely connected networks can undermine generalized trust in others by introducing ambiguity about whether others' generosity stems from benign intentions or the presence of the monitoring and sanctioning systems that exist in such networks (Yamagishi & Yamagishi 1994).

In this way, social mechanisms in a sense foster dependency, as they make themselves more necessary by eroding the force of the person-level factors they complement. For social systems facing the downsides of these social mechanisms the answer is clear: Commit further to the administration of these social mechanisms, as the practicality of relying on individuals' spontaneous prosocial nature is diminished. An important question for future work is what kinds of social mechanisms might promote cooperation among more self-interested individuals but without undermining prosocial motivation or trust. Recent work suggests that some systems that bestow social rewards on prosocial actions are less likely to undermine intrinsic motivations and trust. For instance, although zero-sum status systems can reduce trust in the sincerity of others' prosocial actions (Anderson & Willer 2014), less competitive status and reputation systems appear less apt than monetary sanctions to undermine intrinsic motivation, as suggested by research showing that receiving respect for past generous acts enhances progroup motivation and costly contributions to the group (Restivo & van de Rijt 2012, Willer 2009). More directly, Kuwabara (2015) had participants complete exchanges in the presence of either contracts or reputation systems similar to those used in online marketplaces. In contrast to the downstream effects of contracts, those in

the reputation condition did not subsequently act in less trusting and less trustworthy ways when they interacted outside the purview of the reputation system. Mechanisms of this sort may succeed in promoting cooperation, obviating the paradoxical effects of social mechanisms that promote cooperation while introducing deleterious uncertainty about one's own and others' motivations.

## CONCLUSION

The question of how groups reconcile tensions between what is best for individuals and what is best for the collective has long been central to sociology and other social sciences. That social dilemmas have received such widespread attention is not surprising, given the broad range of situations in which they are encountered and the detrimental consequences that can result when collective efforts founder, such as when common-pool resources are overharvested, arms proliferate between rival nations, or the Earth's climate changes irreversibly due to human activity. As Kollock (1998, p. 183) noted in an earlier review, "many of the most challenging problems we face, from the interpersonal to the international, are at their core social dilemmas."

Research outside sociology has recently explained solutions to social dilemmas through factors residing primarily within individuals. This line of work has established powerful evidence for the force of preferences, motivations, and emotions. Insights from this work, in particular the finding that underlying concern for others' welfare varies greatly across individuals, offer a welcome corrective to the oversocialized model of human nature from early- to mid-twentieth-century sociology, a model famously criticized by Wrong (1961, p. 183) for positing a ubiquitous internalization of prosocial values and denying "the reality of the Hobbesian question." These insights likewise move us beyond the undersocialized (Granovetter 1985) rational egoist models that have long dominated economics and political science but which fail to account for the levels of cooperation documented in both laboratory and natural settings (e.g., Ostrom 1998, Udén 1993). Despite the importance of this line of work, an emphasis on explanations of social order arising from within people risks neglecting the critical sources of social order that come from outside individuals, social mechanisms residing in the structures and institutions in which actors are embedded.

Our review points to the critical role social mechanisms such as rules, reputations, and relations play in creating and maintaining high levels of cooperation in groups. However, we also highlight an important duality inherent to these factors. Precisely because they direct less altruistic individuals to behave the way more altruistic people do, these mechanisms benefit groups while obscuring our view of one another's true motivations. This obfuscation can make us dependent on the mechanisms, as intrinsic motivation and trust are often eroded, even as cooperation rises. In this way, social mechanisms offer to us a sort of social contract, as they take away from us a discerning view of our own and others' character but deliver in return the benefits of efficient, harmonious, and productive group living.

## DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

## ACKNOWLEDGMENTS

Work on this article was supported by grants SES 0647169 and SES 1058236 from the National Science Foundation. We thank Delia Baldassarri, Steve Benard, Kimmo Eriksson, Christine

Horne, Ko Kuwabara, Hanne van der Iest, David Willer, and Toshio Yamagishi for very helpful comments and suggestions on earlier versions of this article.

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