

Experimental Economics and Experimental Sociology



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Summary and Keywords

Experimental economics has moved beyond the traditional focus on market mechanisms and the “invisible hand” by applying sociological and socio-psychological knowledge in the study of rationality, markets, and efficiency. This knowledge includes social preferences, social norms, and cross-cultural variation in motivations. In turn, the renewed interest in causation, social mechanisms, and middle-range theories in sociology has led to a renaissance of research employing experimental methods. This includes laboratory experiments but also a wide range of field experiments with diverse samples and settings. By focusing on a set of research topics that have proven to be of substantive interest to both disciplines—cooperation in social dilemmas, trust and trustworthiness, and social norms—this article highlights innovative interdisciplinary research that connects experimental economics with experimental sociology. Experimental economics and experimental sociology can still learn much from each other, providing economists and sociologists with an opportunity to collaborate and advance knowledge on a range of underexplored topics of interest to both disciplines.

Keywords: experimental economics, experimental sociology, cooperation, social dilemmas, trust, trustworthiness, social norms

Introduction

The social sciences are united around the common project of advancing the understanding of society, social relations, and the individual- and contextual-level factors influencing human judgment, decision-making, and behavior. While sociologists largely focus on studying how human action both shape and are shaped by different social and institutional contexts (i.e., family, workplace, culture) and examine societal distributional outcomes (i.e., inequality), economists concentrate much more on understanding the allocation of scarce resources and behavior in the marketplace (i.e., production, consumption, and distribution of goods and services), with a primary focus on questions surrounding welfare maximization, efficiency, and competition. Of course, social behavior is often economically motivated (e.g., the choice of a profession or the division of labor in the household), and similarly much of economic behavior is socially motivated (i.e., norms of fairness, rep-

utation, or punishment). Yet despite their common interests in understanding human decision-making and behavior, sociology and economics have remained largely separate fields, reflecting disciplinary divisions in theoretical foundations (e.g., rational choice models in economics vs. more eclectic approaches in sociology) as well as methodology.¹

Experimental economics and experimental sociology are two relatively new subdisciplines where economics and sociology meet. This common ground is due to a shared interest in causal identification and the goal to advance an empirically grounded understanding of the mechanisms underlying human behavior. The experimental methodology, which allows researchers to draw causal inferences through the use of random assignment, is thus a bridge that has facilitated dialogue across the two disciplines. Further, this methodology is often chosen with the objective of testing behavioral predictions informed by (bounded) rational choice theory, either in a laboratory or a field setting. Such common grounds have already resulted in a number of important interdisciplinary collaborations among experimental sociologists and economists (e.g., Bigoni, Bortolotti, Casari, & Gambetta, 2013; Efferson, Roca, Vogt, & Helbing, 2016; Gërkhani & Schram, 2006; Schram, Brandts, & Gërkhani, 2019).

However, despite these examples of recent interdisciplinary research by experimental sociologists and economists and a general surge in experimental designs in the social sciences over the past two decades (Baldassarri & Abascal, 2017; Jackson & Cox, 2013), mainstream sociology appears to remain largely untouched by this trend. Figure 1 shows a five-year moving average of the proportion of all articles reporting original experimental research published in the flagship mainstream journals in economics, political science, and sociology. The figure reveals a rapid increase in the proportion of published studies employing experimental designs in most of the top-ranked journals of economics—*American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Quarterly Journal of Economics*, *Review of Economic Studies*—and political science—*American Political Science Review*, *American Journal of Political Science*—since the early 2000s.² In contrast, as demonstrated by the number of experimental studies published in the two top mainstream sociology journals, *American Sociological Review* and *American Journal of Sociology*, it appears that sociology has, if anything at all, only very recently begun to feature experimental research more prominently.³

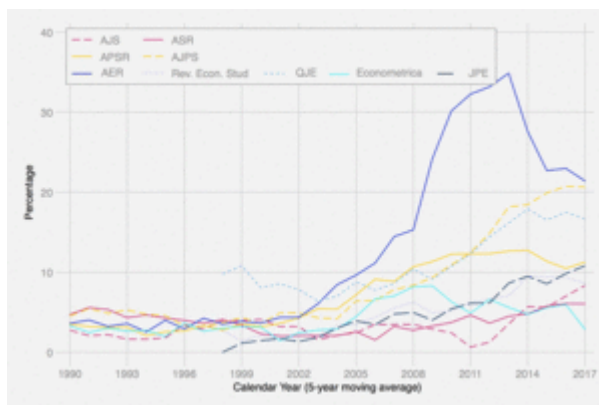


Figure 1. Publication trends of experimental research across social sciences. The graphs show the percentage of original research articles employing experimental designs in top-ranked journals in economics, political science, and sociology (five-year moving average). (Abbreviations: AJS, *American Journal of Sociology*; ASR, *American Sociological Review*; APSR, *American Political Science Review*; AJPS, *American Journal of Political Science*; AER, *American Economic Review*; JPE, *Journal of Political Economy*; QJE, *Quarterly Journal of Economics*; Rev. Econ. Stud., *Review of Economic Studies*.)

This article will highlight innovative interdisciplinary research that connects experimental economics and experimental sociology. Contrary to previous reviews that have underlined the differences and tensions between experimental economics and other social science disciplines (e.g., Hertwig & Ortmann, 2001), we focus on the potential of collaboration and cross-pollination among experimental sociologists and economists. In particular, a more intense dialogue between these two subdisciplines could expand the current thinking of scholars on a variety of phenomena. For example, it could enrich the work of experimental economists studying topics such as the role of the social environment in the formation of prosociality (Hugh-Jones, 2016; Kosse, Deckers, Schildberg-Hörisch, & Falk, 2016), the transmission and development of fairness norms (Sutter, 2007), or the intergenerational diffusion of preferences (Dohmen, Falk, Huffman, & Sunde, 2012).

The experimental method can be used as a diagnostic tool to capture behavior that is difficult to detect in the field, for example by using audit studies to identify job discrimination. The experimental method can also be used as an outcome measure, for example by utilizing a behavioral game to capture the dependent variable. By applying the experimental method as a diagnostic tool or as an outcome measure, both in and outside the laboratory, experimental economists could contribute to a more complete understanding of the embeddedness of social behavior in the economy (such as social network effects in financial and consumer markets) and of economic behavior in social life (like in the family, among friends, or across regions). The feasibility and success of such an approach is illustrated by the innovative work on Muslim discrimination in France using lab-in-the-field experiments (Adida, Laitin, & Valfort, 2016), Bigoni, Bortolotti, Casari, Gambetta, and Pancotto's (2016) use of behavioral games with a representative sample of northern

and southern Italians to understand the social mechanisms underlying regional differences in terms of cooperation, and Gërxhani, Brandts, and Schram's (2013) laboratory experiments that investigate the emergence of employer networks to facilitate information sharing about the trustworthiness of job candidates.

Sociologists, on the other hand, who are interested in causal explanations, can learn from economists by formalizing their ideas into a more structured analytical framework and by using the more rigorous experimental method. In fact, some sociologists have recently used the experimental method to explore how socioeconomic inequalities are reproduced and how they can be changed (see, e.g., Abascal, 2015; Gërxhani & van Breemen, 2019; Reimann, Schilke, & Cook, 2017; Schaub, Gereke, & Baldassarri, 2019). Figure 1 indicates promising trends in this regard, and we argue that the progress made by experimental economists in applying this method can benefit experimental sociologists searching for new answers to classical sociological questions.

What We Do (Not) Cover

To showcase the potential for and the importance of joint experimental research, we have chosen three topics of interest to both disciplines: cooperation in social dilemmas, trust and trustworthiness, and social norms. We focus on these topics because, beyond relating to fundamental questions about social organization, they have been successfully addressed by both disciplines. Unfortunately, space constraints require us to exclude some topics that equally merit attention, such as social networks, discrimination, formal and informal institutions, social status and status competition, poverty and inequality, culture and religion, labor market dynamics, crime and deviance, education, taxation, voting, and political mobilization.⁴ Further, we focus on studies applying laboratory or field experiments only. We thus exclude from consideration survey experiments (Mutz, 2011; Sniderman & Grob, 1996) and natural/quasi-experimental designs (Dunning, 2012).

We will here focus on the literature in sociology that uses an experimental methodology close to that applied by economists. Another significant sociology literature uses methods more common in social psychology (e.g., Cook, Emerson, Gillmore, & Yamagishi, 1983; Molm, 2007; Simpson & Willer, 2015). The main reason to exclude such studies from our overview is that the methodological differences with economists form a serious barrier to successful interdisciplinary work. (For overviews of the related methodological discussions, see Ariely & Norton, 2007; Barrera & Simpson, 2012; Cook & Yamagishi, 2008; Hertwig & Ortmann, 2008.)

Cooperation in Social Dilemmas

Both experimental economics and sociology have made critical contributions to research examining cooperation in social dilemmas. These situations are characterized by a clash between societal and individual interests. Take, for example, the management of common pool resources, such as forests, fisheries, or irrigation systems (Ostrom, 1990). Whereas all users of the common pool resource benefit from private extraction (e.g., logging, fish-

ing), none fully takes into account the effect of its behavior on the overall sustainability of the collective resource. As a result, such resources suffer from overextraction, such that ultimately the ability of all users to benefit from the resource is degraded. In these situations, while society would be collectively better off if all individuals were to cooperate by limiting their private resource use, each individual has a private incentive to free-ride on the conservation efforts of other users.

The Public Goods Game

While free-riding was long predicted to be the dominant strategy in such social dilemmas (e.g., Olsen, 1965), experimental work has sought to establish to what extent behavior conforms to the Nash prediction. Here the workhorse model employs most commonly a public goods game (PGG; Sell & Reese, 2014). In a standard (linear) PGG, participants receive an initial endowment and decide how to divide this endowment between a private and a public account. Whatever participants put in their private account remains theirs; what is contributed to the public account is multiplied and redistributed evenly among all group members, regardless of their personal contribution. The most profitable outcome for the group occurs when all players contribute their entire endowment. However, the most profitable strategy for the individual is to keep the entire endowment in her or his private account and benefit from what everyone else contributes to the public account. PGGs are designed to study how individuals balance the trade-off between self-interest and group interests and thereby elucidate how cooperation under different conditions can emerge and be maintained (Camerer, 2011).

As predicted by theory, in PGGs with repeated interaction plus feedback on the contributions of other group members, contributions fall to very low levels over time (Fischbacher, Gächter, & Fehr, 2001). Scholars have explained this behavior in terms of conditional cooperation: people are willing to contribute to the public good if they believe that others will also contribute as well (Chaudhuri, 2011). However, individuals also wish to avoid being exploited by free-riders. Thus, when confronted with information about low contributions from fellow group members, individuals gradually lower their own contributions. This mutual ratcheting down of cooperative behavior produces a socially suboptimal equilibrium where conditional cooperation leads to a minority of groups where contributions remain high to the end but a majority where contributions fall to zero and free-riding emerges as the norm (Fehr & Gächter, 2000).

The Sanctioning Mechanism

Cooperation can however be sustained at high levels when participants have the option to sanction peers at a material cost, as early public good experiments have shown (Fehr & Gächter, 2000; Ostrom, Walker, & Gardner, 1992; Yamagishi, 1986, 1988). As a result, a number of scholars have argued that sanctioning, though costly in the short term, may be an optimal strategy in the long term to ensure cooperation if people are willing to discipline free-riders and punish others for low contributions (for reviews, see Fehr & Gintis, 2007; Shinada & Yamagishi, 2008). Other research has shown that it is not simply ratio-

nality that drives peer punishment decisions: namely, participants (and third-party punishers) have been shown to sanction in one-shot interactions without future benefits of increasing cooperation (Fehr & Gächter, 2002).⁵

Though peer punishment often leads to sustained high levels of contributions, the effect can be diminished by the presence of retaliation or so-called “antisocial punishment” (Herrmann, Thöni, & Gächter, 2008), a sanctioning regime is unable to sustain high collective levels of cooperation. There are several reasons why punishment does not always increase the welfare of the collective: first, low contributors could punish high contributors for making them look and feel like “bad” actors; second, individuals, although anonymous, could be afraid of retaliation, namely that if they sanction the free-rider, the free-rider would counterpunish; third, participants could be afraid to spend so many resources on punishment that the gains of cooperation are simply dissipated.

Cross-Cultural Research

Research has shown that the extent of antisocial punishment varies across societies. In a seminal paper by Herrmann et al. (2008), the authors find that in some cultural contexts (e.g., United States, Switzerland, Australia) there are high levels of prosocial punishment and low levels of antisocial punishment, leading to high levels of cooperation. But in other countries, such as Greece or Oman, there is considerable antisocial punishment, with the result that cooperation breaks down over time. The authors link the cross-cultural variation in punishment behavior to social norms of civic cooperation and the strength of the rule of law. The argument is that in societies where the rule of law and civic cooperation is weak, people develop a culture of honor, where any offense is met with retaliation. Participants then import these norms into their game behavior in the lab. The authors offer a fascinating hypothesis, namely that the macro-institutional environment we live in and are embedded in shapes our behavior and the strategies we apply in abstract cooperation scenarios.

This idea is echoed by the work of Henrich et al. (2001, 2006, 2010). The interdisciplinary research team around Henrich showed that the level of prosociality evident in a society is correlated with market integration and the payoffs for cooperation in daily life (Henrich et al., 2001). The researchers found that in small-scale societies where people were more likely to engage in market transactions with strangers, members were also more likely to display prosocial behavior and reciprocity toward strangers. The authors interpret this result as evidence that preferences and behavior are, unlike suggested by the “canonical model of individual choice behavior,” shaped by an individual’s economic and social environment (Henrich et al., 2001, p. 77).

This is a groundbreaking conclusion that speaks to the intersection between sociology and economics. Much of mainstream neo-classical economics has assumed that people are on average rational or that heterogeneity in preferences is randomly given. However, these authors show that preferences are not just endogenous but also predictable, as they are “shaped by the social and economic interactions of everyday life” (Henrich et al.,

2001, p. 77). This general finding resonates with much of the sociological scholarship that is based on the assumption that context-level factors and the socioeconomic structure are important predictors of individual behavior. The idea also has methodological implications for a discipline that uses primarily student samples from Western, educated, industrialized, rich, and democratic (WEIRD) societies (Henrich et al., 2010, p. 1), because it highlights the need to go beyond the typical European and North American undergraduate student samples if we are interested in establishing findings that are generalizable to other populations. People in different societies can have radically different preferences and strategies even when faced with the same formal institutions because they face different economic and social environments.

Trust and Trustworthiness

Questions exploring the causes and consequences of trust and trustworthiness comprise another important research agenda of experimental economics and sociology. Trust is commonly defined as the judgment and behavior of an individual in a two-person strategic interaction between a trustor (investor) X who trusts and a trustee Y who may reciprocate trust or, in other words, be trustworthy (e.g., Coleman, 1990; Gambetta, 1988). Trust and trustworthiness are essential in most social and economic transactions, whether among sellers and buyers in the marketplace, employers and employees in the workplace, or citizens of the same welfare state (e.g., Cook & Santana, 2018; Gërxhani et al., 2013; Yamagishi, 2011). Most of the research in this field, which has focused on trust rather than trustworthiness partly because of measurement problems (Ermisch & Gambetta, 2016), found that trust can lower transaction costs by enabling informal agreements rather than complex formal contracts and their costly enforcement (Ermisch, Gambetta, Laurie, Siedler, & Noah Uhrig, 2009, p. 749). In short, trust is often described as the social glue binding relationships, groups, and societies (Coase, 1960; Cook, 2001; Durkheim, 1964; Van Lange, 2015; Wilson, 2018).

The Trust Game

Experimentalists commonly measure trust in a trust game, also often referred to as investment game, which in essence captures an investment decision under uncertainty (e.g., Berg, Dickhaut, & McCabe, 1995). The game models the sequential interaction between two actors who have alternative choices: the first player (trustor) chooses to trust or not the second player (trustee). Any amount passed on by the trustor to the trustee is multiplied (usually by a factor of three), and the trustee has to decide how much she or he wants to send back to the trustor. The fact that the trustee would receive information about how much was passed on is common knowledge to both participants (see Barrera, Buskens, & Raub, 2015).

Economists have explained the trustor's decision to trust based on rational expectations of trust being reciprocated (Dufwenberg & Gneezy, 2000; Falk & Fishbacher, 2006). The game theoretical prediction of the trust game is that there should be no reason for a self-

interested trustee to return anything, and therefore self-interested trustors with rational expectations should not make any transfer in the first place (see Buskens, Frey, & Raub, 2018). Trust is commonly measured as the amount that the trustor sends, while trustworthiness is defined by the amount returned by the trustee (Ashraf, Bohnet, & Piankov, 2006).

Results from anonymous one-shot trust games are inconsistent with the predictions from classical economic theory for self-interested agents: in fact, participants in both the trustor as well as the trustee roles make considerable transfers in the game (Berg et al., 1995; Bohnet & Zeckhauser, 2004; Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005). In a meta-analysis, Johnson and Mislin (2011) find that trustors send on average half of their initial endowment, and trustees reciprocate on average 37% of the tripled amount. One explanation that has been advanced for why the behavior deviates from the game-theoretic prediction relates to fairness concerns (Bolton & Ockenfels, 2000; Charness & Rabin, 2002; Fehr & Schmidt, 1999): from the trustor's perspective it may seem unfair to keep everything, while from the trustee's perspective it may seem unfair not to return some of it if the trustor has sent money (see also Cox, 2004, for other explanations of behavior in trust games).

Behavioral Trust and Trustworthiness and Real-World Behavior

Trust and trustworthiness are not only important outcome variables for experimentalists but have also been used as explanatory variables to understand variation in socioeconomic outcomes. For example, Karlan (2005) finds that borrowers of a Peruvian credit and savings association who displayed more trustworthy behavior in the trust game were also more likely to repay their loans one year later. Cardenas, Chong, and Ñopo (2013) and Bouma, Chong, and van Soest (2008) also use incentivized trust games in Latin America and India, respectively, to predict the success of community-level social capital. Cardenas et al. (2013) find that sending more as a trustor is associated with being a member of an organization, attending group meetings, and volunteering in social organizations.⁶

These results can also be scaled up to explain macro-level differences in social and political outcomes. Take for example the oft-cited divide between Italian regions in terms of economic and political performance (Putnam, Leonardi, & Nanetti, 1994; Zhang, 2018). In a multi-year research project, an interdisciplinary research team examined how the Italian north-south divide in socioeconomic outcomes may be explained by different propensities to trust among northern and southern Italians (Bigoni et al., 2013, 2016). The authors find in a series of lab-in-the-field experiments that there is in fact a higher propensity to trust and cooperate in the north than in the south (Bigoni et al., 2013). A follow-up study with northern and southern Italian students in the laboratory further examined the origin of the differential ability to trust and cooperate across Italy. The main finding is that the gap is not due to differences in prosocial preferences but rather explained by the pessimistic beliefs that southerners have about the cooperativeness of their fellow citizens (Bigoni et al., 2016). These studies are good examples of interdisciplinary research that makes use of important macro-level variation in outcomes and then takes behavioral

games as measures to examine the determinants of such variation (i.e., trust) with diverse population.

Embedding Behavioral Measures in Field Surveys

A recent innovation in experimental work on trust and trustworthiness in complex modern societies involves the embedding of economic games in surveys with representative population samples. For example, Cettolin and Suetens (2018) use experimental data from a trust game as part of a survey in the Netherlands to study ethnic discrimination by varying the name of the interaction partner (either a Dutch or a typical immigrant name). The level of trustworthiness that Dutch respondents exhibit when encountering a Dutch name versus an immigrant name is taken as an indicator of taste-based discrimination. The authors find that respondents reciprocate up to 12% less if the trustor is an immigrant rather than a native Dutch, and this result is especially apparent among those who exhibit explicitly anti-immigrant attitudes.

Based on a similar setup to study ethnic diversity and trust, Gereke, Schaub, and Baldassarri (2018) examine how immigration-related ethnic diversity and poverty are associated with levels of trust in Germany. The authors use data from a trust game included in the German Socio-Economic Panel. In addition to focusing on individual-level characteristics, they ask how the demographic composition of an individual's immediate environment (i.e., the neighborhood) affects the propensity to trust. The main finding is that both individual-level wealth (i.e., household income) as well as contextual diversity (i.e., the percentage of immigrants living in one's immediate surroundings) influence the decision to trust.

Embedding behavioral games in population-based surveys, as these two examples highlight, can open up new avenues for exploring contemporary policy-relevant questions.⁷ Repeating the same behavioral module in panel surveys, such as the German Socio-Economic Panel, can further help to shed light on how changes in the environment (e.g., economic recession) or the personal conditions (e.g., becoming unemployed) impact individuals' trust and trustworthiness. However, even non-representative convenience samples, like Amazon's Mechanical Turk (MTurK) or Prolific.ac online platforms, can enable researchers nowadays to cheaply combine economic games with survey questions on participants' socio-demographic characteristics, their personal history, and their attitudes and beliefs (see, e.g., Garcia & Abascal, 2016). The ability to merge behavioral and attitudinal data represents an underexploited opportunity for researchers to bring a greater degree of contextual insight into their analysis of game behavior. These new and interesting opportunities for experimentalists to combine surveys and experiments have already resulted in innovative research on the effects of group identities and social inequalities (e.g., status, power, and income) on trusting behavior in social exchange (Casella, Kartik, Sanchez, & Turban, 2018; Côté, House, & Willer, 2015; Schaub, Gereke & Baldassarri, 2019; Schilke, Reimann, & Cook, 2015).⁸

Social Norms

Another area of interest that has reached across disciplinary boundaries for experimental economists and sociologists is the study of social norms. Social norms are generally defined as shared informal rules of behavior that are jointly recognized by members of a certain population (Bicchieri, 2005). As such, social norms guide standards of appropriate and inappropriate behavior in a variety of settings, ranging from waiting in line to not littering (Coleman, 1990; Elster, 2009; Hechter & Opp, 2001). Moreover, social norms are future-oriented and conditionally followed based on a set of beliefs and expectations with respect to a specific reference group.

A social norm thus differs from a fad (e.g., for men, wearing a suit without socks) or convention (e.g., wearing sunglasses in the summer). More precisely, following Bicchieri's definition, social norms are based not purely on a coordination problem (e.g., driving on the left vs. the right side of the street) but rather on a social expectation ("oughtness") that may be enforced through (social) rewards or sanctioning by peers (Elster, 1989). Social norms also differ from social preferences, a topic that has in recent years received increasing attention in experimental economics (Charness & Rabin, 2002; Levitt & List, 2007), in that social norms are group-specific solutions to strategic problems (Sugden, 1998) rather than stable individual dispositions (Binmore, 2010). More precisely, a social norm exists when two conditions are met: the empirical belief that others will comply to the norm and the normative expectation that others also believe that you ought to comply with the norm (Bicchieri, 2005).

Different Approaches to Measuring Social Norms

There are several ways of measuring social norms.⁹ First, some scholars have tried to measure the existence and salience of a social norm indirectly. The idea is that when an action is sanctioned, punishment itself is a sign that a social norm has been breached. For example, Fehr and Gächter (2002) indirectly derive a cooperation norm from the punishment of free-riders. Another example of measuring social norms in this way is Rauhut and Winter's (2010) use of the "strategy method" (Selten, 1967) in ultimatum games.¹⁰ In the strategy method, players have to decide on a contingent action for every possible action taken by the other player before learning about the actual decision. The authors argue that in the Ultimatum Game, Player 2's decision to reject the allocation can be seen as a form of costly punishment. Using this setup, Winter, Rauhut, and Miller (2018) investigate potential normative conflicts over considerations of equality, equity, and efficiency for the distribution of joint earnings. By looking at the number of rejected offers in a dynamic bargaining game, they can identify the norm and then study bargaining over norms.

Krupka and Weber (2013), on the other hand, use a between-subject design with simple dictator game variants to verify the presence of shared normative expectation. First, they incentivize participants to assess the extent to which different actions in the dictator game are collectively perceived as socially appropriate by asking participants to match

the modal response given by others in the same dictator game situation. The authors then use these elicited assessments to predict other participants' compliance with the relevant social norm in different dictator game variants.¹¹

Another approach to measuring norms is simply to ask people about their empirical and normative expectations. Empirical expectations are relatively easy to elicit: researchers simply ask participants "How many other people in the room took action X?", with answers being incentivized. Normative expectations are more difficult to probe. Bicchieri (2005) suggests first asking participants "Is it right to do X?" (non-incentivized) and then, following up, asking, "How many other people said it's right?" (incentivized). This way of measuring social norms also allows researchers to study what happens when empirical beliefs and normative expectations conflict. Bicchieri and Xiao (2009) designed an experiment in which they exposed participants of a dictator game to different pieces of information, both descriptive and normative. They found that both types of information had a significant influence on dictators' expectations and subsequent choices, but when messages conflicted in the sense that one indicated generosity and the other indicated selfishness, only the descriptive information affected dictators' behavior. The results suggest that "if people recognize that others are breaching the norm, then they will no longer feel compelled to follow the relevant rule of behavior themselves" (Bicchieri & Sontuoso, 2018, p. 14).

Social Norm Change

These tools can be adapted within sociology to understand long-standing questions about the emergence, maintenance, and evolution of social norms (Durkheim, 1964; Parsons, 1937). While some social norms are efficient and socially beneficial (e.g., offering your seat to older people on public transport), others, such as female footbinding in imperial China or street gang violence in Chicago, are not only inefficient but often even life threatening (Bicchieri, 2005; Mackie, 1996). Understanding the persistence and the sudden change of such "unpopular" social norms is of interest to sociologists and potentially useful for policymakers.

The classic account is that unpopular norms remain stable because being the first mover may be costly in terms of facing rejection (Cialdini & Goldstein, 2004) or sanctioning (Hechter & Opp, 2001).¹² In the case of footbinding, given that everyone was bound, women with unbound feet had a difficult time finding marriage partners (they were sanctioned). Even though it was collectively irrational, it was individually rational to follow the norm, and the norm could only change with a coordinated move. In this case, the coordinated shift to a new unbound equilibrium came from parents' associations that pledged not to footbind their daughters or let their sons marry footbound women (Mackie, 1996). However, once a critical mass of first movers was reached and there was common knowledge of the new norm, the old norm of footbinding quickly unraveled.

In the footbinding example, both individuals' empirical and normative expectations about what is best and appropriate for their children was changed by the parents' associations.

This has an analogue in Schram and Charness's (2015) experimental study, in which the participants who played dictator games received advice about what dictators "ought to do" from a group of uninvolved third parties. By doing so, the authors generated exogenous variation in the dictators' normative expectations. The results show that participants' dictator game choices are indeed affected by this information.

Contemporary Examples of Normative Change

Another line of research on social norms change comes from a team of social psychologists, who conducted field experiments on bullying and school harassment among adolescents (Paluck & Shepherd, 2012; Paluck, Shepherd, & Aronow, 2016). The authors argue that harassment can be the result of social norms that deem it socially acceptable rather than simply a result of personal attitudes. Using measures of empirical and normative expectations, behavioral outcomes, and social network data to map the reference group, they randomly assigned a subset of the students to a student-driven intervention program—a skit performed at the school assembly illustrating the adverse consequences of harassment, which was reinforced by follow-up events later in the school year. They found that after the intervention, students' personal beliefs or attitudes regarding harassment were not changed but those with more ties to "social referents"—individuals who are viewed as important sources of normative information (e.g., students who are the leader of a clique, thus are more popular or have a higher status)—perceived a significant decrease in the general norm of harassment. In a large-scale follow-up field experiment on anti-conflict interventions across 56 schools in the United States, Paluck et al. (2016) found that levels of conflict were reduced by an estimated 30% over one year.

These examples illustrate that when expectations change, normative change can take place. However, the question is how to credibly change expectations. In Schram and Charness's (2015) study, the authors were in a position of authority to inform participants about the social norm, and the situation was rather abstract. Paluck et al. (2016) show that social status and peer influence of social referents had an outsized influence over social norm change and behavior at the school. In another field experiment on reducing intergroup prejudice and conflict in Rwanda, Paluck (2009) points to the importance of common knowledge provided in this case by the radio as essential to change expectations. Using a coordination game in the laboratory, Gërkhani and Bruggeman (2015, p. 14) suggest, however, that simply a time lag—"a temporal distance between individual decisions to support a norm change and the change itself"—may leave expectations unchanged and thus decrease the likelihood that an unpopular norm will actually change.

Another way of approaching normative change is to place it into the context of demographic change. When people holding different social norms come together, there is potential for normative conflict (Winter, Rauhut, & Helbing, 2012; Winter et al., 2018), which weakens the prevailing norm (Álvarez-Benjumea & Winter, 2018). This mechanism becomes especially important in the context of ethnic diversity. One argument holds that norms are less effective in diverse societies because it is more difficult to sanction across ethnic groups. However, a recent field experiment reveals that norm enforcement is

asymmetric (high-status groups punish low-status groups, but are treated leniently in turn) and thus suggests that the relationship between diversity and norm enforcement is not monotonic (Winter & Zhang, 2018).

We believe that studying change is the research frontier on social norms, which also provides an avenue for interdisciplinary research. Social norm change requires some first movers to deviate from the existing norm, but given that first movers are likely to encounter social sanctions, who has an incentive to be a first mover? Recent research suggests that prosocial individuals, who experience a conflict between their prosocial values and the existing formal rules, will first try to change the social norm in order to bring about institutional change (Gërkhani & van Breemen, 2019). First efforts to isolate and examine the conditions and barriers to changing social norms experimentally have already been laid by a handful of researchers (e.g., Gërkhani & Bruggeman, 2015), but there is still room for more research on social norm change, especially because social norms are often domain specific and history dependent.

Studying Social Norms in the Field

While much of our current experimental knowledge on social norms rests on evidence established in the laboratory, recent research has measured social norms and their enforcement in real-world environments, with natural reference groups in lab-in-the-field experiments with non-student populations (see, e.g., Ensminger & Henrich, 2014; Goette, Huffman, & Meier, 2006; Hoff, Kshetramade, & Fehr, 2011) and in non-obtrusive field experiments that are free of social desirability (e.g., Berger & Hevenstone, 2016; Dieckmann, Jungbauer, Krassnig, & Lorenz, 1996; Przepiorka & Berger, 2016). This is particularly important because research on social norms has suggested that behavior for some social norms differs substantially between the laboratory and the field (e.g., Balafoutas, Niki-forakis, & Rockenbach, 2014). Therefore, we believe that for future research on social norms, there is an opportunity for experiments not just in the laboratory but also in the field.

Conclusion

In this article we have highlighted what we believe has been influential and innovative experimental research on three topics of shared interest to economists and sociologists: cooperation in social dilemmas, trust and trustworthiness, and social norms. Furthermore, we have argued for the benefits of closer cooperation among experimental economists and experimental sociologists and pointed out where we believe there is more room for interdisciplinary research. Moving beyond the lab helps to meaningfully examine heterogeneity in terms of populations, which has always been of interest to sociologists. The cross-cultural work of Heinrich et al. (2001, 2006, 2010) and their critique of the social sciences focusing almost exclusively on behavior of people in WEIRD countries has given rise to cross-cultural research agendas in experimental economics (e.g., Falk et al., 2018; Vieder et al., 2015). However, there are three potential roadblocks to cooperation for

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scholars of these two disciplines that require an open-minded dialogue for successful interdisciplinary research to emerge.

First, although both groups of scholars are interested in behavior, sociologists go beyond that and often also aim to better understand opinions, attitudes, and stereotypes. However, while most experimental economists believe that self-reported attitudes and opinions are little more than cheap talk, experimental sociologists often wish to complement such behavioral measures with survey measures about *ex ante* beliefs to better understand the motives underlying the behavior or the *ex post* justifications (see, e.g., Winter & Zhang, 2018).

Second, sociologists and economists may disagree about how best to elicit reliable behavioral measures. Experimental economists emphasize the importance of monetary incentives to motivate truthful and meaningful behavioral responses from the experimental subjects, whereas some sociologists employ experimental designs that are not incentivized, for instance hypothetical vignette experiments on surveys (e.g., Auspurg, Hinz, & Sauer, 2017; Liechti, Fossati, Bonoli, & Auer, 2017).

Third, while experimental economists have a stricter ethical standard that does not permit any form of deception, experimental sociologists coming from the social-psychology tradition rather than the game-theoretical/mathematical sociology tradition are more lenient about using deception when it is ethically justifiable and does not spoil the existing subject pool (see, e.g., Tusicisny, 2017).

Although these differences across the two subdisciplines are relevant, they are not impossible to overcome, as the above numerous examples of successful interdisciplinary research indicate. Moreover, we believe there is much potential for generating new insights into the foundations of human decision-making by taking seriously the effects of actors' socio-environmental context on their preferences, expectations, and behavior. By examining how decisions are embedded in the social and institutional context, experimental economists can gain more realistic accounts of human behavior and its variations across societies. Sociologists have a long tradition of paying close attention to the social and institutional structure and linking it to emotions, beliefs, and behavior in explaining social behavior (Elster, 2015). Bringing with them this context-level knowledge and a set of theories that explain social behavior in the marketplace as well as economic behavior in social situations, they are well equipped to use the experimentalist toolbox and expand our current knowledge about variation in macro-level cultural differences across societies. Sociologists, on the other hand, who are interested in causal explanations, can learn from economists how to formalize ideas into a more structured analytical framework to better explain and predict behavior. They may stand at the cusp of a golden opportunity to embrace experimental research and thus advance our knowledge of social theory.

To conclude, by no means do we advocate that experimental economics and sociology should have the same focus: economists will remain more interested in efficiency because of the allocation of scarce resources, while sociologists will remain more focused on who benefits from this allocation and why. We hope, however, to have shown that a bridge be-

tween the two subdisciplines has resulted in more breakthrough research than if they had remained in isolation and that there are still many opportunities for cross-pollination that we hope future research will take up.

Further Reading

Peer-reviewed international journals in which interdisciplinary experimental economics and sociology research has previously been published include the following:

The Economic Journal
Experimental Economics
Games and Economic Behavior
Journal of Behavioral and Experimental Economics
Journal of Economic Behavior and Organization
Journal of Experimental Political Science
Journal of Experimental Psychology
PloS One
PNAS
Rationality and Society
Social Networks
Social Psychology Quarterly
Social Science Research
Sociological Sciences

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Notes:

(1.) Two exceptions are perhaps economic sociology and economic history, which have a long tradition in engaging with economic theory and explaining socioeconomic behavior.

(2.) Three top mainstream economics journals, namely *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economic Studies*, were added for the time period 2000–2017, because in contrast to sociology and political science, economics considers more than two top journals. For this reason, we felt that the choice of restricting it, like in previous reviews, to either *American Economic Review* and *Econometrica* (Jackson & Cox, 2013) or *American Economic Review* and *Quarterly Journal of Economics* (Baldassarri & Abascal, 2017) does not do justice to the field.

(3.) The graph is not meant to capture the entire scholarship on experimental research in each discipline. For example, there are various highly regarded specialized journals where many experimental sociologists publish that rely preliminary on the social-psychology tradition. Here we focus only on the top general-readership journals of each discipline.

We thank Michelle Jackson and D. R. Cox for sharing their data to reproduce Figure 1 for the period of 1990–2010. Our original data, spanning the period from 2010–2017, is available upon request.

About a decade ago, Diekmann (2008) came to a similar conclusion based on experimental articles published between 2005 and 2007 in the *British Journal of Sociology*, the *American Journal of Sociology*, and the *American Sociological Review*, compared to those published in the *American Economic Review*.

(4.) For researchers interested in the topics of discrimination and identity, we refer to recent review articles by Baldassarri and Abascal (2017; field experiments), Lane (2016; economic lab experiments), or Aksoy (2015) for empirical examples on the effect of heterogeneity in social identities on cooperation. For those interested in social networks in general and related to the labor market in particular, see Buskens, Corten, and Raub (2015) and Gërkhani (2017). For social status, see Ridgeway (2014).

(5.) While most research on sanctioning examines peer punishment, some scholars have also considered the role and legitimacy of centralized punishment institutions, which are argued to be more relevant in larger groups where bilateral punishment becomes inefficient and unlikely to sustain cooperation (see, e.g., Baldassarri & Grossmann, 2011; Grossmann & Baldassarri, 2012). For a review on the scholarship on centralized sanctions and leadership, see Simpson and Willer (2015).

In addition to punishment, experimental research using PGGs has also shown the benefits of communication for maintaining cooperation by helping to coordinate expectations about the contributions of other group members (Balliet, 2010; Bochet, Page, & Puttermann, 2006; Ostrom et al., 1992; Sally, 1995).

(6.) In comparison, self-reported measures of trust, as from the classic generalized trust question (Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?) included in numerous large cross-country surveys (e.g., World Value Survey or General Social Survey) did not successfully predict real-world behavior in Karlan's (2005) or Cardenas et al.'s (2013) studies. Rather, survey responses were significantly associated with trustworthiness behavior, but not trusting behavior in the context of the trust game. For a recent discussion on the trust game in comparison to survey measures of trust, see Wilson (2018).

(7.) Other research that examines different questions using trust games embedded in a population survey in the United Kingdom include Ermisch and Gambetta (2016) on income and trustworthiness.

(8.) Several studies have evaluated the reliability and comparability of results from economic games with low stakes on online platforms, such as MTurk, to results obtained in conventional laboratory settings. Together they support the validity of results obtained from economic experiments on MTurk (e.g., Amir et al., 2012; Buhrmester et al., 2011; Mason & Suri, 2012; Horton et al., 2011; Paolacci et al., 2010; Rand, 2012; Rand et al., 2011; Suri & Watts, 2011; Weinberg, Freese, & McElhattan, 2014).

(9.) We have decided to dedicate a separate subsection to the measurement of social norms because it appears fundamental in the contributions made in economics and sociological experimental research.

(10.) The ultimatum game (Güth et al., 1982) is a simple two-player game in which Player 1, the proposer, is asked whether and how much he or she wants to split with Player 2, the responder. After hearing the decision of the proposer, the responder can either accept or reject it. If the responder rejects the offer, both players receive nothing. If the responder accepts the proposer's split, the money is split accordingly.

(11.) See Gächter et al. (2013) for an application of this elicitation procedure.

(12.) Research highlights the role of third-party punishment in maintaining social norms (Fehr & Fischbacher, 2004).

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