

contradictions. Simplistic class analyses will turn them off, and in any event, don't actually do much work in explaining the timing and content of neoliberal doctrines. For instance, while there has yet to be written a serious history of the Bank of Sweden Prize in Economic Science, I very much doubt it will be attributed to the class of Swedish corporate heads who "used their control over the Nobel Prize to consolidate neoliberalism within Swedish economic thinking" (p. 113). After all, back then even they felt the need to 'balance' the Prize given to Hayek with one to Myrdal; it is only now that such notions strike us as quaint.

Returning to our own point of departure, the thing that turns out to be most striking about the MPS is the extent to which the neoliberals imagined their ideal market utopia long before there was much in the way of footsoldiers or patrons poised to carry off their revolution. It was not that disgruntled conservative philosophers and corporate movers and shakers knew precisely what sort of political economy would prove to coincide with their interests; rather, they had to be taught what it was they wanted. Here lies a lesson for all explanations rooted in self-interest.

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The Grammar of Society: The Nature and Dynamics of Social Norms, by Cristina Bicchieri. Cambridge and New York: Cambridge University Press 2006, xvi + 260 pp.

In *The Grammar of Society* Cristina Bicchieri presents a rational reconstruction of social norms in terms of preferences and expectations, making a key contribution to our understanding of the motivations behind norm compliance. Bicchieri also introduces a norm-based utility function

and assesses its predictive power in social dilemma-type situations. Furthermore she shows how certain psychological characteristics of individuals may lead to the emergence and survival of a norm of fairness in populations playing the Ultimatum Game.

The notion of social norms is somewhat problematic. Bicchieri carefully distinguishes among four different but related concepts: descriptive norms, conventions, moral norms and social norms. Descriptive norms are behavioral rules that are followed by people when they expect a sufficiently large subset of the population to comply. Examples of descriptive norms are fashions and fads. Conventions are defined as regular patterns of behavior that are a strict Nash equilibrium in Coordination Games with two or more Nash equilibria. Car drivers, for instance, do not particularly care about the side of the road on which they are driving; all they want is to avoid an accident. Moral norms do not require expectations of any kind, since their followers are motivated by the belief that there is something intrinsically good behind compliance. Norms prohibiting murder constitute a good example of moral norms.

Bicchieri focuses on social norms. According to her, social norms are behavioral rules having a conditional structure. Social norms are not fixed behavioral patterns but rules that are preferred when subjects are properly focused, expect others to conform (*empirical expectations*) and believe others also expect them to comply (*normative expectations*). If people are not aware of the norm or do not have the required beliefs, then compliance does not necessarily follow. The conditional nature of norm compliance allows Bicchieri's model to explain a much broader set of empirical evidence than previously existing economic models that regard particular social norms as significant motivators of individual decision making.

Empirical expectations are always necessary in strategic scenarios and form part of every notion of equilibrium. The distinctive feature of Bicchieri's definition is the requirement of mutually held *normative* expectations. Not only do players expect each other to conform; they also believe that they ought to. Consider for example a norm of reciprocity. If an individual receives a present, or somebody does a favor for her, she will not only think that the others expect her to reciprocate, she will also believe that this expectation is legitimate. Not conforming will make her feel guilty and she may prefer to comply, even in the absence of sanctions, to avoid this feeling. The possibility of sanctions is also taken into account in Bicchieri's theory as an alternative source of normative expectations. However, the belief in the legitimacy of the expectations of others yields norm compliance without the need for potential punishment.

Bicchieri regards social norms like cooperation, reciprocity, and fairness as informal behavioral rules meant to solve games in which there is a potential for joint gain but at the same time room for opportunistic behavior. In these so-called *mixed motive games*, if players were to choose

according to their narrow self-interest they would end up worse off than if they had followed some rule to select a Pareto efficient outcome. The Prisoner's Dilemma and Public Good Games are examples of mixed motive games. In these cases social norms provide a natural route out of Pareto-inferior equilibria. In a nutshell, potential norm followers, who are aware of a social norm and believe that a sufficiently large subset of the population shares their empirical and normative expectations, will experience a loss of utility by transgressing the norm to the point that opportunistic behavior will cease to be the dominating strategy.

Social norms have been largely regarded as significant motivators of individual decision making. Yet the available body of empirical evidence points at a significantly high variance in norm compliance. Bicchieri discusses in depth a plethora of field experiments to show how simple contextual factors can induce people to behave in completely different ways. For instance, the propensity to litter has been found to depend on how clean the environment is or the attitude of others towards littering, and the disposition to provide help in an emergency that has been found to be related to the number of bystanders and other contextual factors. Bicchieri's model is the first formalization of social norms that accounts for the fact that norm-abiding behavior can be manipulated by means of situational cues. Viewed in this light, Bicchieri convincingly argues that these empirical results are more robust than originally thought.

According to Bicchieri, motivations to follow a norm can be assigned to three categories. On the one hand, subjects may be motivated by the desire to behave according to what is considered legitimate and/or by the desire to please others and be approved by them. These two types of motivations, rooted in normative expectations, are crucial for the emergence and sustainability of norms in the absence of monitoring. On the other hand, subjects may be motivated by the desire to avoid sanctions, a source of motivation for a minority of the set of potential followers. Norm followers whose behavior is grounded in the fear of punishment need not find the rule legitimate and may deviate when their actions are not observed.

Bicchieri claims that situational cues are important yet not alone capable of producing norm activation, as they need to be focused upon and properly interpreted. Bicchieri argues that the wealth of experimental studies pointing at the conditional nature of norm compliance and the context specificity of norm activation are consistent with a theory of script activation. According to this theory, social norms are embedded into cognitive structures that represent stored knowledge about people, events and roles, and provide the subject with the necessary expectations. Once an individual has identified and categorized a situational cue, for instance a market transaction or a reciprocal exchange, a script providing information about the appropriate behavior for that role is activated. Framing effects

have a decisive impact upon compliance because they play an important role in the categorization of situational cues.

Based upon ample evidence in the psychological literature, Bicchieri identifies another cognitive mechanism leading to the formation of empirical and normative expectations, which is particularly important for the emergence of social norms. This mechanism is grounded in a form of 'psychological essentialism', according to which people attribute essential properties to social categories by considering them as homogeneous entities with a robust inductive potential. As Bicchieri says, "in treating social categories as natural kinds, people pay disproportionate attention to surface characteristics and physical signals, taking them as diagnostic of deeper, essential traits" (p. 90). This form of essentialism is a powerful source of expectations in social contexts, promoting as a by product the emergence of norms: it makes us ascribing motivations to agents prior to interaction. This is an elegant way to bridge the gap between psychology and the social sciences, showing how our own cognitive limitations could contribute to emergence of norms.

We have described the general structure of norms. We need now to make explicit how this notion of social norm is integrated within a proper utility function. Bicchieri's norm-based utility function of player i consists in her self-interested or pre-normative utility function minus a discount factor resulting both from the sensitivity of the agent concerning departures from the norm at stake (" k_i ") and the maximum loss incurred by some other player in case of a deviation by i from the norm under consideration (" N_i "). For each player i , the function " N_i " maps the strategies of her opponent prescribing the norm under consideration into the strategies of player i that are compatible with the norm.

Let us take the Prisoner's Dilemma as an example. As it is widely known, in the Prisoner's Dilemma (PD) selfish individuals would prefer to play their strictly dominant strategy, namely defection. Yet subjects, for whom the PD elicits the norm of cooperation, will have different preferences over outcomes. According to Bicchieri's norm-based utility function, subjects who expect cooperation will prefer to cooperate whereas those who expect defection will prefer to defect. In this case, " N_i " maps cooperation (defection) by i 's opponent into cooperation (defection) by player i . As stated, the impact upon behavior of these changes in preferences will depend on the subject's sensitivity towards norm deviations (" k_i " in Bicchieri's model). The activation of the norm of cooperation and the norm-based utility function *transform* the original game into a Coordination Game with two strict Nash equilibria: one in which both players cooperate, which is Pareto superior, and one in which both defect. Essentialist players, for whom the game elicits the norm of cooperation and who think other players are like them, will expect cooperation and will therefore prefer to cooperate.

In the last chapter, Bicchieri takes on a fascinating topic when she asserts that fairness, in contrast to pro-social norms like cooperation, does not seem to be indispensable for the functioning of a society. There are, as a matter of fact, many feasible societies in which resource allocation is clearly unequal, but no viable societies lacking social norms of reciprocation and cooperation. This raises the question of how a norm of fairness could have emerged in an evolutionary setting. To tackle this issue, Bicchieri simulates a model in which individuals within a population play a repeated Ultimatum Game. Along the process subjects assume that there is a real norm to be discovered and play best responses given their beliefs. The endogenous variables of this process, k_i and N_i , evolve from initially given probability distributions by a kind of reinforcement process. The simulations converge to equal division, or quasi-equal division in less than 20 interactions.

These results are based upon two psychologically plausible assumptions. Subjects are assumed to display a propensity to herding behavior and to have a preference for following what is believed to be a shared norm. Proposers form expectations regarding the amount that receivers think they should offer by *projection*, assuming that all other individuals in the population share the norm perceived by them. The issue is of course how to justify the primitive assumptions of this model. According to Bicchieri, the exogenously given sensitivity to defections and the disposition to punish, represented in her model by k , have evolved out of repeated play of social dilemma-type of situations and then propagated to all sorts of social norms, including those that are not essential to the survival of a society. At this respect, it would be interesting to investigate how the distribution of k 's could have evolved and whether the homogeneity assumption behind the normal distribution of k 's is empirically defensible.

There are two comments that we would like to make. We are going to discuss them in turn. The first comment is rather methodological: it concerns the functional form of Bicchieri's norm-based utility function. In order to illustrate this point, we briefly summarize her treatment of the Ultimatum Game and the Dictator Game. In the Ultimatum Game the first player (the Proposer) has a fixed amount of money 'M' to allocate between herself and another player (the Responder) according to the following rules: the Proposer can offer any sum x between zero and M to the Responder. The Responder can either accept or reject the offer. If he accepts it the players end up with $(M-x)$ and x respectively. If the Responder rejects the offer, both players end up with nothing. A rational Proposer should offer the minimum amount he believes the Responder is willing to accept and a rational Responder should accept any amount greater than zero. This yields a subgame perfect equilibrium where the Proposer offers 1 cent and the Responder accepts it. Yet this outcome

is almost never observed in experiments. The modal and median offers in one-shot experimental games range between 40% and 50% and the mean offers between 30% and 40%; offers below 20% are rejected half the time (p. 104). The Dictator Game is a variant of the Ultimatum Game in which there is no possibility of rejection. The Responder must accept whatever amount the Proposer offers. Experimental evidence shows that in the Dictator Game the offers of Proposers are sensibly smaller than in the Ultimatum Game.

The norm based utility function can explain the data concerning the Ultimatum Game under different parametric settings assuming that the game elicits a norm of fairness. The same holds for other fairness-based frameworks, which Bicchieri thoroughly describes. The problem is how to explain the data concerning the Dictator Game, a problem that the alternative theories discussed in the book also face. Bicchieri argues that in this game there is no obvious applicable norm, a statement that she supports with the results of a survey (p. 126). In the absence of an applicable norm Bicchieri's model coincides with the pre-normative utility function. This fact should decrease the amount offered approximating the selfish solution. We may wonder if this is the only available interpretation. In fact another way to make sense of these empirical findings would be to keep the norm of fairness and relax the effect of the fear of punishment that enters the norm based utility function through the normative expectations with sanctions. This need not conflict with Bicchieri's model, although it would require providing further information in her function about which are the determinants of " k_i " and " N_i ". The first option is to focus on " k_i ". If the sensitivity to norm compliance, " k_i ", were partly dependent on the legitimacy of the norm and partly on the fear of punishment, then the absence of monitoring should reduce the Proposer's " k_i ". This option, however, is problematic because " k_i " represents a stable disposition. The other option consists in including the possibility of sanctions as an argument in the function defining norm-based behavior (" N_i "). This second option would allow us to ascribe to the Ultimatum Game and the Dictator Game the same functional form for the fairness norm. What would change is the value of one of the arguments of this function. This could yield the necessary change in the amount offered, explaining away the different empirical findings concerning each game.

The second comment concerns the advantage of Bicchieri's model with respect to the existing models in the literature. The norm based utility function introduced by Bicchieri in this book can be seen as a generalization of previously developed models that introduce either fairness, equity or reciprocity because these models already assume that some particular norm is activated and followed. The broad scope offered by the lack of specification of a norm allows Bicchieri to accommodate different experimental phenomena. However, to be less *ad hoc* than other frameworks

the model should be able to predict which norm will be activated in a given scenario. We expressed our concerns that k could depend on other variables or parameters in the utility function. The same holds for N , the parameter representing the impact of the activated norm upon the choice of a strategy. To enhance the applicability of Bicchieri's approach, we need to thoroughly characterize the mapping from cues to activation and expectations, and assess the robustness of these relationships.

In this review we have attempted to illustrate a few aspects of the norm-based framework developed by Cristina Bicchieri. Many other interesting contributions of the book, like Bicchieri's analysis of the emergence and survival of dysfunctional norms, unfortunately remain beyond the scope of this short review. A stimulating work for scholars in social psychology, experimental economics and evolutionary game theory, this book motivates unexplored streams of research and provides an integrated and testable account of the role of norms in strategic interactions.

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The Price of Truth: How Money Affects the Norms of Science, David Resnik.
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It is now commonplace to read about the dramatic changes in the funding of science that have occurred in the last quarter century. The headline story, which generally focuses on the United States, is one of a shift from public to private funding. While this can easily be overstated – even in the US, federal funding of total R&D has never actually decreased (at least in current dollars) and has remained by far the largest single source of finance for R&D in academic institutions – the greater importance of commercial funding is undeniable. In this context, fears about the effects of money on science have been steadily rising. Resnik's book seeks to examine these effects in detail and to propose possible solutions to the problems he identifies. In doing so, one of his main targets is the argument that science is an incorruptible pursuit of the truth. As he puts it (p. 5), it is "naïve to think that money has no influence on the behaviour of scientists."