

## Book Review

THE GRAMMAR OF SOCIETY: THE NATURE AND DYNAMICS OF SOCIAL NORMS (274 pp., \$27.99). By Cristina Bicchieri. Cambridge: Cambridge University Press, 2006.

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Cristina Bicchieri's (2006) *The Grammar of Society* has a somewhat misleading title: the book is not about the types of transformation rules familiar to linguists, but rather about how game theory can provide a formal underpinning for understanding cultural norms. The title, however, is apt: one of Bicchieri's main arguments is that norms can transform mixed-motive games (such as the prisoner's dilemma) into coordination games (which can have win-win outcomes if the players can coordinate), just as a grammatical rule can transform a noun into a verb or present tense into past tense. The book balances economic, social, and psychological theory, relying on game theoretic models of behavior, field and laboratory studies from the judgment and decision making tradition, and examples of fashions, fads, and other norms in our societies. This perspective is useful because even while the author reduces complex social situations into simple games, she does not lose sight of how these games are relevant to norms that influence behavior, including diverse examples such as teenage binge drinking, Holland's tulip bulb mania, and littering along the Italian coast.

The first chapter provides a fairly lengthy and in-depth background on the author's approach. Notably, she distinguished between descriptive and social norms. Descriptive norms are behaviors like fashions and fads that a group happens to usually follow (e.g., the typical length of a hem). In contrast, social norms are likely to be more entrenched, requiring the person to believe that others will approve or disapprove of the behavior. The distinction between these norms is not just made in verbal terms, but formal mathematical definitions are used, circumscribing the exact conditions in which a behavioral rule  $R$  for a mixed-motive game  $S$  can be said to be a social or descriptive norm. This pays off in later chapters, as it allows laboratory experiments to be tied to social phenomena, and predictive models of dynamic behavior to be framed that can account for unpopular norms.

Also in Chapters 1 and 2, Bicchieri describes the familiar two-route model of behavior, which she calls "deliberational" and "heuristic." Norms are viewed as following the heuristic route, which supports the thesis that norms are not just automatic behaviors activated in response to situations, but are rather contextual and dependent upon whether the person views them as relevant to the current situation.

Chapter 3 focuses on the ultimatum game. In the ultimatum game, one player (the giver) shares a sum of money with another player (the receiver). The receiver can either accept the share (in which case both players keep the amount the giver decides) or reject the share (in which case both players receive nothing). Typical "rational" accounts suggest that the giver should give the least amount possible, and the receiver should accept any offer greater than zero. However, experiments have found that, even for one-shot games, receivers reject offers of less than 10% of the value about half the time, and modal offers typically range between 40 and 50% of the total. This game is interesting because its results imply that entrenched norms of reciprocity and sharing trump self-interested behavior. This chapter focused almost entirely on laboratory research, and did not make ties to why the ultimatum game was a useful analog for behavior in the "real world."

However, such examples are not hard to bring to mind: tipping in casinos is a direct analog, where a share of the winnings is sometimes given to the dealer. However, we suspect it is rare for winners in the casino to give anywhere near half their winnings to the dealer.

Chapter 4 focuses on social dilemmas, epitomized by the prisoner's dilemma. These mixed-motive games are argued to be direct analogs of social norms, and are reasonable models of many social situations. In these social dilemmas, the direct benefit to the individual is typically in opposition to the benefits enjoyed by the group, yet empirical research finds cooperation, especially when discussion is allowed before-hand and verbal covenants are forged. In this way, it is argued that social norms transform the game into one of coordination, where the benefit to others is valued as well as direct self-interest. Many of the empirical findings discussed here focused on how group identity can influence willingness to activate the norms and engage in behavior that benefits the group at a monetary cost to the individual.

Chapter 5 is probably the most interesting and provocative of the book. Here, Bicchieri discusses how social norms may form that are disliked by the very people whose behavior propagates them. The formation of such norms relies on the notion of *pluralistic ignorance*, in which members of a society might believe that a norm they personally dislike is approved of by the rest of the society. Because norms can influence social behavior, often inducing people to behave counter to their own narrow best interests (as shown in Chapters 3 and 4), pluralistic ignorance can lead to situations in which an individual's behavior no longer signals his or her true beliefs. Then, the norm can become entrenched, not because many believe it is right, but because people think that *others* believe it to be right. Bicchieri also offers a provocative conjecture about such unpopular norms: they are brittle and can be dismantled through information, and especially through the influence of *trendsetters*. This notion makes clear the role that monks in Myanmar and lawyers in Pakistan can really have in effecting change. They themselves may be quickly silenced and imprisoned, but their willingness to stand up to unpopular norms signals to the rest of their society that the norm may not be widely held, which may produce an *informational cascade* that can indeed bring about wider social change. Bicchieri showed through simulation in Chapter 6 how an equal division norm can emerge across a group of simulated agents playing the ultimatum game. By playing the game repeatedly (with a random partner each round), the agents develop sharing norms that approach equal-sharing behavior sometimes found in human societies.

Overall, the book puts forth an interesting theory about norms, and frames the theory in the formalism of game theory and expected utility. As such, the arguments appear to be an apology for rationality, declaring that the normative (and putatively irrational) choice is actually a rational one. Yet it may be true that humans are simply behaving irrationally in some of these situations. Perhaps at an evolutionary level, useful but individually irrational beliefs and behaviors have developed. These might include beliefs such as the gambler's fallacy and karma. For example, as Bicchieri describes, the ultimatum game produces sharing even for one-shot games, and even when playing against computers (although to a lesser extent than repeated games with human partners). An irrational belief about karma could drive sharing in the ultimatum game, because one might believe that sharing in this situation will be repaid later.

Another weakness of the approach is that it appears to describe necessary conditions for descriptive and social norms, but not the sufficient conditions. For example, reading over the "Conditions for a descriptive norm to exist" (p. 31), it is clear how situations like walking on the right side of the sidewalk are social norms, but it appears to describe other behaviors that are not. Consider how bird calls often have genetic determiners, but can also be influenced by socialization. Biologically determined behaviors might not be norms, but may still satisfy the conditions for these norms to exist. One might argue that these biologically determined behaviors should be considered norms, but then should this be extended to behaviors like "grasping with ten fingers," "seeing with two eyes," and "obeying gravity"? It is unclear where this line should be drawn, but at least the book provides a formal definition in reference to which such questions can be framed.

In summary, this book provides a provocative discussion of norms from a game theoretic perspective, dealing with both empirical research and social phenomena. It could serve as supplemental reading for grad-

uate students, although its greatest insight requires familiarity with game theory and the ability to understand basic mathematical formalisms. If one is willing to accept the claims made about the mathematical formulas (which probably only appear a dozen or so times), there are many high-level theoretical insights the book provides, and a fairly broad coverage of experimental results in the ultimatum game and social dilemma games. Most importantly, the book provides some solid formal grounding for models of social and cultural systems and beliefs, and will hopefully promote future research in the area.

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