Many of the chapters in the volume point to the importance of collecting and improving data measuring economic outcomes and performance, and some identify key roles that staff economists or economists who were appointed to head agencies during particular administrations played in developing, gaining approval for, and implementing the successful policies. There may be some professions and disciplines that get even more of this kind of support in Washington—lawyers, say—but it seems likely that economics is now at or near the top of the list. If so, that may be because the usefulness of economics, economists, and better data on economic performance has been increasingly recognized in Washington over recent decades and is becoming more entrenched. That would have been another interesting topic for an introductory or summary chapter in the volume.

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As the title makes clear, this book does not suffer from a lack of ambition. Herbert Gintis believes that biology, psychology, economics, anthropology, sociology, and political science can be fruitfully related and unified by means of game theory. That is, game theory can serve as the common basis and language of all of these “behavioral sciences.”

To a large extent, the game theory that would play this role is the game theory familiar to economists. However, Gintis argues that this familiar game theory needs significant reemphasis and modification. For example, Gintis argues that correlated equilibria should be emphasized at the expense of Nash equilibria. The necessity for a correlating device then allows for the importation of norms from disciplines other than economics. Despite the suggested modifications of game theory, the basic approach should be very appealing to many economists, as it is to me, for example. On the other hand, it’s hard to imagine that psychologists or sociologists, for example, would be content with such a circumscribed role for their disciplines. Although the target audience for this book is wide and multidisciplinary and there is some material that is relatively accessible, the reliance on cutting-edge game theory from economics will inevitably limit the readership.

This book features elegant derivations of many of the most interesting results in modern game theory. Gintis begins with a nice account of the underlying decision theory, including time inconsistency, the Allais and Ellsberg paradoxes, subjective expected utility theory from Savage, and prospect theory from Kahneman and Tversky.

Gintis takes the first opportunity to introduce the concept of correlated equilibrium (CE), as introduced by Aumann, which plays an important role in his argument. Whereas a Nash equilibrium (NE) allows individuals to use independent randomizing devices, a CE allows individuals to use signals that may be correlated. Gintis proposes that this correlating device can be interpreted as a social agency whose design involves imports from other behavioral sciences. To emphasize this interpretation, this device is relabeled as “the
choreographer.” I quite agree that CE are given too short a shrift relative to NE. Even without relying on the reinterpretation that Gintis advocates, appropriately structured signals in the real world may make reliance on personal independent randomization unnecessary. CE have many more attractive mathematical and conceptual properties than do NE. Results that must be awkwardly qualified to apply to NE are simply stated for CE. For example, rationalizability is stronger than iterated elimination of strictly dominated strategies, for independent strategies, but, as Gintis remarks in chapter 4.7, the two notions are equivalent for correlated strategies.

Another crucial theme in Gintis is to take “other-regarding” preferences seriously. Such preferences seem to be needed to account for behavior in a variety of experimental settings. For example, using previous work by Gintis and various coauthors, the notion of a strong reciprocator is described and advocated. Such an individual would punish someone else who has been unfair to the first individual despite there being a cost of doing so. A strong reciprocator then puts an emphasis on the means by which payoffs are generated. This is to be contrasted with an inequality aversive individual (as in work by Fehr and Schmidt) who is concerned with the ends—the bottom line payoffs themselves. Individuals may even indulge in altruistic third-party punishment—punishing a party who wronged another, despite the cost and despite not being directly involved.

This excursion into the experimental literature makes one wonder which of the experimental anomalies is the most empirically important. Further, although we may ultimately be forced to adopt more than one additional type, if we could add just one, which one would best help to account for the observations?

Gintis next provides a nice treatment of epistemic games. Such a formulation of games gives prominence to what individuals know and believe (about others’ strategies, for example). He then moves on to consider weakly and strictly dominated strategies and procedures that iteratively eliminate such strategies. These procedures rely upon common knowledge of rationality (CKR).

In a two person game, for example, all statements of the general form player i knows that player j knows . . . that player i or j maximizes payoffs are true.) Gintis makes a convincing point here and elsewhere is that CKR is not a deep psychological trait that can safely be assumed to hold independently of the context. In some contexts, that is, CKR is not exceptionable; in many others, it is very hard to accept.

Gintis next focuses on Aumann’s claim that CKR implies backwards induction in generic games of perfect information. Gintis argues that Aumann is correct, despite the objections raised by the various critics he cites. Consider the centipede game, for example, in which the unique SPE entails both players choosing “out” at every opportunity. If the first player chooses “continue,” and so induces a move off the SPE path, the assumption of CKR has then been violated. But an SPE entails any such deviation being followed by an SPE of the resulting subgame. If CKR is false, why should this be? Gintis (inspired by Aumann) responds as follows: All this proves is that, if you have CKR, you cannot ever leave the SPE path.

There was a vigorous debate on these issues in the literature, which involved a number of additional subtleties. For example, it is crucial for Aumann’s argument that rationality itself is defined conditional on having attained each possible node and then looking forward. The conceptual difficulty is that this embeds by fiat much of the substance of SPE. Gintis’s more fundamental point, however, remains that CKR may well be highly implausible in large extensive form games, rendering somewhat moot his take on Aumann versus his critics.

In a mixed strategy NE, each individual must be indifferent to all mixtures of the pure strategies in the support of her equilibrium mixture. Gintis takes the view that such indifference is problematic and I agree, although I would not attribute as much significance to such indifference as does Gintis. He claims indeed that such indifference means that the choice of the equilibrium strategy is not incentive compatible, but this is to add a requirement of strictness to incentive compatibility that it does not usually have.

Gintis is impressed by Harsanyi purification. This considers a small arbitrary type-specific perturbation of the payoffs of the original game. A general mixed strategy equilibrium of the original game can then be approximated by an equilibrium in which individuals typically have a strict
incentive to play a pure strategy. Mixing then only arises in the aggregate. This is a beautiful result, beyond any doubt. On the other hand, Gintis is not persuaded by the subsequent Aumann and Brandenburger approach under which players harbor commonly known and identical conjectures about the choices made in the game. This approach is agnostic about the choice actually made by each player, who does not then need to mix at all. This agnosticism might be seen as a strength; Gintis sees it as weakness. It seems a matter of taste rather than logic, so it seems a little exaggerated to label Aumann and Brandenburger as “incorrect” on this score.

A key result that buttresses Gintis’s emphasis on correlated strategies is Aumann’s justly celebrated result that, in an epistemic game, Bayesian rational agents with a common prior will play a correlated equilibrium. This is perhaps the best example of how a CE is a more natural concept than NE. This result is contrasted with an analogous epistemic characterization of NE. Since this latter characterization entails commonly known strategic conjectures, the epistemic conditions required for NE are much less plausible than those for CE.

Gintis also presents still another remarkable Aumann result concerning the impossibility of agreeing to disagree. That is, given a common prior over the return on a stock, for example, there can be no trade between parties who have acquired different additional information. A willingness to buy the stock at some price on the part of one individual would effectively reveal his additional information, so he would find no one else willing to sell. Since trades occur in reality, at least one assumption made here must be invalid. The usual suspect is the assumption of a common prior.

Since purification may fail to obtain for NE and CE of even moderately complex games, Gintis argues that the only way to ensure compliance with the dictates of the choreographer is for individuals to have a normative predisposition to obey. This is part of his attack on individualism, which is, perhaps, the key view that Gintis advocates. I am open-minded about the possibility of a variety of social influences on strategic behavior. However, although the argument here is interesting and highly ingenious, it seems a bit too tangential and recondite to be totally convincing. It is hard to believe one can derive such a basic result from abstract difficulties at the cutting edge of hyper-rational game theory. At the very least, such a derivation could not appeal much to those who are largely innocent of game theory.

As something of an aside, chapter 9 is devoted to a suggestion by Gintis of a “local best response” (LBR) principle for refining NE in extensive form games. He believes this rests on a clearer conceptual footing and produces preferable results when compared to conventional refinements such as subgame perfection. This is a striking claim and I was intrigued enough to try to evaluate it carefully.

This was not easy to do, however. The principle itself is most formally stated in the last paragraph on page 165. It was hard to find all the definitions of the relevant terms in the preceding pages. However, part (a) of the LBR principle apparently states the following: Consider a player \( j \) who moves at an information set \( \nu \). Player \( j \) must then conjecture that player \( i \)'s behavioral strategy at an information set \( \mu \) derives from some equilibrium strategy \( \tau \) that reaches both information sets, if any such strategy exists. The meaning of part (b) seems to be the standard requirement of sequential rationality.

What does this principle buy in terms of results? What seems to be a telling example is the game known as Selten’s Horse on page 172. Here the only NE that satisfies LBR is stated to be the very NE that is usually intended to be eventually disqualified. This is a NE where player \( B \), who is not given the move, makes a choice that is not sequentially rational in the light of the subsequent choice of player \( C \). Although Gintis claims that this is rational for player \( B \), this seems to be a simple arithmetic slip. In any case, although Gintis argues otherwise, part (a) of the LBR criterion cannot be formally applied as Gintis seems to apply it because there is no NE in which both player \( B \) and player \( C \) are reached. However, all that is needed to rule out the dubious NE is sequential rationality on the part of player \( B \), as seems to be part (b) of the LBR principle. In the end, therefore, the LBR principle does not seem to produce new insights in this example.

One minor possibly attractive property of LBR is that it applies the force of SPE only where it
matters. That is, if there is a node of an extensive form game of perfect information that is not reached in any NE, for example, it is unnecessary to restrict the choice made at this node. However, although SPE does restrict the choice at such a node, this is harmless by the same token.

Altogether, although there may be a contribution by Gintis here, there is a minor need to tighten the definition of the LBR principle, a major need to draw its implications more generally and rigorously, and, finally, a need to better relate it to the relevant literature (Philip J. Reny 1992, for example).

Gintis next presents material on the folk theorem with imperfect public monitoring, with private signals, and related issues for repeated games. He again comes to a rather pessimistic conclusion regarding the success of such models in accounting for real-world cooperation. The sheer multiplicity of equilibria seems to be one motivation for this pessimism. This topic concludes the part of the book that centers on core material from modern game theory.

Gintis then presents some interesting work of his and his coauthors on the evolution of property rights. The basic idea is that property rights serve as a correlating device that improves payoffs by avoiding conflict. More particularly, his argument derives from Maynard Smith's analysis of the Hawk–Dove game. There are two asymmetric pure strategy equilibria in this game, one where each player wins and the other backs down. Ownership of the resource can then serve as a correlating device under which the proprietor wins the lion's share. As Gintis points out, this is not completely satisfactory in that there is also a symmetric antiproperty equilibrium in which the invader gets the lion's share. Gintis then sketches a dynamic model with a large number of resource patches. These patches require an initial investment but eventually die, forcing the proprietor to move on. It is often the case here that the property equilibrium has higher average payoffs than does the antiproperty equilibrium. Group selection, which is fraught in biology in general, is innocuous for the purpose of selecting between NE and would then pick the property equilibrium.

The final chapter of the book calls for the unification of the behavioral sciences. In principle, there are contrary arguments that stress the value of letting a thousand flowers bloom in order to facilitate picking of the best posy in the end. In practice, however, given the current insular state of the behavioral sciences, it is hard to deny the abstract appeal of such unification. Perhaps, indeed, the time has come to start picking the best posy. All of this is much easier to say than it is to do, of course. What Gintis emphasizes here are the relevant aspects of the fields in question rather than a more detailed prospectus of how this unification could be accomplished.

References


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Almost sixty years ago, Simon Kuznets pioneered the use of tax data plus auxiliary information (for example, national income accounts) to chart the evolution of top income shares—that is, the share of total income accruing, for example, to the top 1 percent (or smaller, 0.01 percent) of the income distribution. As household survey data on income distribution became readily available, Kuznets’s methods went out of practice but have reemerged with the recent rise in income inequality, largely due to the efforts of Thomas Piketty and Emmanuel Saez, who focused their initial attention on the United States and France. Top Incomes in Global Perspective is the second of two edited volumes that extend the Piketty–Saez research agenda to many other countries in the hopes of developing a (more or less) common global database as well as a set of facts and working hypotheses about top income shares and their possible determinants.

Top Incomes is divided into a brief preface followed by twelve substantive chapters and a conclusion. The chapters are arranged geographically