WHAT CAN BE LEARNED FROM THE GAME-THEORETIC ANALYSES OF TREATIES?

A COMMENT ON *TREATIES: STRATEGIC CONSIDERATIONS*

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In his paper, *Treaties: Strategic Considerations*, Professor Sandler neatly illustrates how seven factors influence the formation and content of treaties signed by self-interested nation states. In so doing, Professor Sandler's analysis confirms four of the important findings of Professors Goldsmith and Posner's prominent study of customary international law[1] and applies them to treaty formation, identifying three additional factors that shape treaty making. Professor Sandler, like the latter scholars, undertakes positive analysis of customary international law which gives pride of place to self-interested actors (typically nations or their governments[2]) and to the nature of any strategic interaction between these actors. This comment discusses the potential boundaries of this methodological approach, and in so doing, offers a better understanding of what this research program has and has not achieved to date and what challenges it might tackle in the future. First, however, it is important to situate Professor Sandler's analysis in the relevant economic literature.

Professor Sandler rightly acknowledges that the study of cooperation between self-interested agents (of any type and, therefore, not just of governments) is not a new research program, at least as far as economists are concerned. The twentieth century—in particular, the second half of the century—saw significant advances: first, in the analysis of cooperative game theory, and later, in the analysis of noncooperative game theory. Having said that, economists arguably did not wait for the theory of games to be developed before considering the implications of national

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1. JACK L. GOLDSMITH & ERIC A. POSNER, THE LIMITS OF INTERNATIONAL LAW 10–14 (2005).
2. Governments are typically treated as unitary actors.

interdependence and strategic interdependence for the design of one of the most important components of what we now call the postwar international financial architecture. Economic historians have plausibly argued that the senior economists who represented the major parties to the Bretton Woods intergovernmental conference in 1944 were very well aware of the consequences of noncooperation between nations in the implementation of national exchange-rate and macroeconomic policies.[3] To avoid so-called beggar-thy-neighbor devaluations, a regime of fixed, but adjustable nominal exchange rates was established and codified in the Articles of Agreement of the International Monetary Fund ("IMF").[4] A series of presumptions as to which nations would adjust rates and under what circumstances, as well as the terms upon which nations could seek assistance from the IMF, were incorporated into those Articles.[5] Thus, for better or for worse, certain economic ideas have been influencing treaty making for some time.[6]

Economists' interest in the terms upon which nations collaborate on many different types of policies has remained strong over the years. After the extraordinary dislocations and shocks experienced by national economies in the 1970s, many macroeconomists examined the pros and cons of various cooperative initiatives between nations. Perhaps the most prevalent of which were proposals to coordinate, and typically stabilize, bilateral exchange rates, some of which were codified into formal international agreements such as that underlying the European Monetary System.[7] Other initiatives, such as coordinated fiscal expansions, which were much discussed in the late 1970s, were agreed to by industrialized nations but not codified in binding treaties.[8] Meanwhile, from the 1950s on, international trade economists began analyzing so-called tariff wars using game-theoretic tools with self-interested national govern-

3. The aforementioned senior economists are Mr. Harry Dexter White and Mr. John Maynard Keynes from the United States and the United Kingdom, respectively. As is well known, only those two countries dominated the negotiations over the creation of the International Monetary Fund and the World Bank at the 1944 Bretton Woods conference. One of the most remarkable features of this particular conference is the fact that the U.S. and U.K. governments delegated power to leading economists to draft proposals for a set of postwar international financial institutions. For the perspective of an American economic historian on the negotiations at Bretton Woods, see HAROLD JAMES, INTERNATIONAL MONETARY COOPERATION SINCE BRETTON WOODS 1–84 (1996). Professor James was also the official historian of the International Monetary Fund at the time of drafting this book. It is important to contrast this view with that of British economic historians. *See, e.g.*, R.F. HARROD, THE LIFE OF JOHN MAYNARD KEYNES 525–85 (1951) (on the perspective of the lead British negotiator during the Bretton Woods conference).

4. *See* Articles of Agreement of the International Monetary Fund art. IV, Dec. 27, 1945, 60 Stat. 1401, 2 U.N.T.S. 39.

5. *Id.*

6. Indeed, there may well be earlier examples where economic logic or economists have influenced treaty making between states.

7. *See* JAMES, *supra* note 3, at 297–98.

8. *Id.* at 289–96.

ments.[9] During the 1990s and afterward, trade economists have devoted plenty of attention to providing game-theoretic rationales for certain important existing multilateral trade rules.[10] They have also examined the effect of one type of international agreement formation (namely, the signing of free trade agreements) on the willingness of self-interested actors to enter into another type of international treaty (specifically, treaties that further reduce discrimination against foreign suppliers of goods and services on a multilateral basis).[11] The fields of environmental economics and public finance saw similar such developments, and Professor Sandler cites a number of the important contributions in these literatures. There is, therefore, much research that an analyst interested in the study of international treaty formation (and international cooperation, more generally) can draw upon (and no doubt, other social sciences have contributed in this respect as well). The question arises, however, as to what we can expect to learn from a research program grounded in such a positivist and rationalist approach. The comments that follow were motivated by assessing Professor Sandler's paper and are directed as much to the consumers of this research program's output as they are to its associated producers.

The first comment concerns the questions being asked in the strategic analysis of treaties. Professor Sandler is very clear about this matter, stating that his purpose is to examine the formation, content, and adherence to treaties.[12] These are indeed significant matters. However, it should be recognized that there are other important questions in which analysts of treaties might plausibly be interested. Normative questions, such as whether a treaty should be signed and whether certain provisions are acceptable, may well turn on ethical and other considerations that do not take center stage in a typical strategic analysis.[13] However, in the study of treaties, it may be important to go beyond the traditional and rather black-and-white distinction between positive and normative matters in social science. For example, knowing whether a given ethically desirable outcome can be attained and sustained by a given type of

9. One of the earliest, and certainly the best known, analyses of tariff wars is Harry G. Johnson, *Optimum Tariffs and Retaliation*, 21 REV. ECON. STUD. 142, 142–53 (1953–54).

10. An important contribution to this literature can be found in KYLE BAGWELL & ROBERT W. STAIGER, THE ECONOMICS OF THE WORLD TRADING SYSTEM (2002).

11. An overview of the economic research on the latter point can be found in chapter 9 of ROBERT C. FEENSTRA, ADVANCED INTERNATIONAL TRADE: THEORY AND EVIDENCE 300–37 (2004).

12. Todd Sandler, *Treaties: Strategic Considerations*, 2008 U. ILL. L. REV. 155, 156.

13. For example, in the field of international antitrust, almost all of the cooperation agreements signed by enforcement agencies explicitly forgo the potential benefits to customers and others that might follow from the exchange between agencies of certain types of apparently confidential business information. In this case, business information and secrets are privileged above other considerations, precluding the introduction of various cooperative instruments in codified cooperation agreements. Arguably, a positive analysis could be employed here to identify the nature and magnitude of the costs that a society forgoes for arbitrarily privileging business secrets, even those business secrets that may sustain anticompetitive practices. In general, positive analysis can shed light on the "price" that societies have to pay for an apparently important principle or value.

treaty, whereby all of the relevant parties willingly participate in the treaty and adhere to it, could provide interesting information for policy-makers, analysts, and the like. Moreover, knowing that a given ethically desirable outcome could never be supported by a class of treaties with a given set of properties where signatories act in a self-interested fashion could provide useful information too. (The latter point indicates that negative findings—that is, of what is not possible—could be of considerable interest.)

In short, the game-theoretic analysis of self-interested potential treaty participants need not be confined to rationalizing what is; it could shed light on what desirable outcomes could be sustained in a world of self-interested actors. (Note that the latter analysis takes the ethical precepts underlying the desirable outcome as given.) In this way, analysts might learn more about the limits of certain types of treaties in solving certain types of international collective action problems. Indeed, for each class of international collective action problem, it would be useful to develop a mapping between different types of treaties and the set of outcomes which they can sustain. Such mappings would also shed light on the extent to which self-interested behavior by nations really constrains the set of viable treaties and the potential overall level and distribution of the benefits of treaty making across states.[14] In general, rationalist analysis can go beyond accounting for what is and could serve ethically motivated international treaty making, as well as provide a better understanding of the boundaries (or limits) on what international treaties can accomplish.

Other interesting questions about treaties concern the manner and processes by which they are negotiated (especially when there are, in principle, a very large number of negotiating parties) and the distinct matter of how self-interested actors determine their national priorities and form their expectations about the likely priorities of other parties. The manner in which treaties are originally conceived, proposed, and negotiated may well shape the extent and content of the observed set of existing international treaties and might introduce a role for sequential process and procedure, bureaucracy, and expectations into explanations of treaty formation. It should be immediately conceded that there are economic analyses of negotiating and bargaining rules (and that expectations play an important part in almost all intertemporal game-theoretic analyses). However, what is being referred to here is also the manner in which self-interested actors assess their payoffs and the payoffs of other actors from different permutations of choices. Typically, these payoffs

14. Indeed a paper that addressed the following title might be of considerable interest: "A World of Self-Interested Nations: Just How Bad Is It?" The answer to the latter question may well vary across policy areas. Even so, knowing what constraint self-interest really imposes would be interesting, especially if actors interact repeatedly over time (when game-theoretic models tend to suggest that cooperation and the incentive to forgo short term temptations to violate agreed norms or behavior is most limited).

are taken as a given (that is, considered as a parameter) in game-theoretic analyses of treaty formation. Although it is true that uncertainty over payoffs has been modeled by game theorists, the difficulty arises in the assumption that actors' expectations play a critical role in determining the outcomes because compelling explanations are rarely given as to the origination of those expectations. Analysts of treaty making may legitimately want to know how those expectations are formed, what factors influence them, and whether there is any potential for disagreement between parties as to payoffs or for miscalculations on one party's part about another party's payoffs. To the extent that national bureaucratic and political processes influence these expectations, the *hows* may influence the *whats* of treaty making.

A broader point is that, in order to say more about a relatively tightly defined set of circumstances, much economic modeling rightly emphasizes parsimony in assumptions. This parsimony has two prices that consumers of the literature on treaty making should bear in mind.[15] The first price is that there may be interesting questions which are set aside—perhaps even questions that, on some metrics, are more important than the ones addressed by game theorists and economists. The second price is that special care is needed when interpreting the policy implications of a model that has been deliberately designed to exclude considerations that perfectly reasonable individuals might consider important. The question always arises as to whether the predictions or policy implications of the model can be generalized (that is, are not overturned) if other factors are introduced in the analysis.

The second comment concerns precisely what is being explained by Professor Sandler's analysis and by similar analyses. A treaty is a written agreement that stipulates what parties must, must not, or can do in different contingencies. A treaty, therefore, is an explicit agreement between parties and is not an informal understanding. Unfortunately, the theory of games, in particular, the theory of repeated games, can rationalize why self-interested parties engage in implicit agreements. Codification in these analyses is unnecessary if each party understands what it and every other party will do in each possible contingency. Indeed, on this view, codification of such an understanding would only be credible if there is an implicit agreement which mimics the formal agreement's terms and, more importantly, adheres to the dictates of sequential rationality on the part of the players. An example may highlight the problem. If the threat of a tariff war (the imposition of tariffs that are much higher than those currently levied on imports) provides the incentive to self-interested countries to ordinarily keep tariffs low, then why do countries commit themselves in the General Agreement on Tariffs and Trade ("GATT") to a formal agreement whereby they will set tariffs below

15. Consumers of economic literature will be aware that the following points are not unique to the analysis of treaty making.

agreed maximum (or in the language of international trade, "bound tariff") levels? Arguing that the threat of a tariff war justifies these GATT provisions is not enough; the threat (assuming it is credible) only justifies an informal agreement between nations. Not a word need be written down. Indeed, on this logic, the theory of repeated games could in fact be used to justify the paucity of international treaty making (if implicit agreements are so effective). In fact, however, many scholars choose to argue that this theory can explain precisely the opposite, namely, the vast amount of observed treaty making! Something is quite wrong here. In short, what is needed is a convincing theory of codification of agreements that can be combined with an analysis of the incentives created for self-interested actors by agreements. At present, game theory's strength is in accounting for the latter, but not the former.[16] A proper account of actual treaties requires both.

In conclusion, this short comment is intended to offer some words of warning and encouragement to the consumers and producers of rationalist theories of treaty making. Much more could probably be learned about treaties, especially if analysts begin to systematically explore what types of treaties better address what types of international collective action problems. Indeed, given a set of explicitly defined preferences, it might be possible to develop rankings of the effects of different types of treaty instruments. There is much to learn here beyond rationalizing what is. Having said that, the rationalist literature on treaty making still has to address some fundamental matters associated with treaties, such as why they are codified in the first place. Treaties have a number of different characteristics, and those seeking to rationalize their existence with analytical models (of any type) ought to account for as many of the characteristics of treaties as possible. This, in turn, may allow policymakers, legal and economic scholars, and others to better understand the role that treaty making can play in the current era of extraordinary interdependence between societies.

16. These last remarks should not be taken to mean that no one has ever thought about codification.