Book Review

Rational dynamics of rivalry

By

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A review of *Bound by struggle: The strategic evolution of enduring international rivalries* by Zeev Maoz and Ben D. Mor. Ann Arbor, Michigan: University of Michigan Press, 2002.

There is no doubt that the development of game theory by von Neumann and Morgenstern (1944) was a brilliant intellectual achievement. Yet, as readily admitted by its creators, game theory was born a static theory, able to model the unchanging structure of conflict situations and the choices of rational actors in those situations. Unfortunately, this general approach often proved unable to accurately model the interactive nature of real-world bargaining and conflict. It would not capture the fact that in most conflict situations punches are not thrown simultaneously, but one after the other by players who are not only focused on their immediate self-interest, but who are making choices for the long term. Indeed, Maoz and Mor's *Bound by struggle* has come a long way from that approach. Building upon recent innovations in game theory and the recent focus on the emerging concept of rivalry in international relations theory, the authors succeed in providing an elegant model that explains the evolution of enduring interstate rivalries. To be sure, evolutionary

dynamics had been applied before in international relations, e.g., by Diehl and Goertz (2000) who use the concept of a punctuated equilibrium to explain the observation that in international rivalries long periods of inactivity erupt into sudden military disputes that give way to extended periods of non-violence. In contrast, Maoz and Mor are less interested in applying Darwinian or neo-Darwinian ideas to extended hate-affairs between two states. Their model is firmly grounded in rational choice theory, explaining the dynamics of interstate rivalry as a consequence of the rational actions of self-interested, yet reasonably circumspect actors.

The authors' central assumption is that games played between two rivals are subject to transformation as the actions of either player might dramatically change the structure of the situation—or the perception thereof on the part of the players. There are 25 different 2 x 2 games, i.e. qualitatively distinct types of relationships, in which two rivaling states may be

engaged. Maoz and Mor arrange these different games in a "supergame," that is, a 5 x 5 matrix of specific game types. Which games actors are playing is primarily dependent on two factors: One actor's perceptions of the goals of the other actor, and one's own preferences or preference changes. Preferences are determined by one's satisfaction with the status quo and an actor's perceptions of an actor's capabilities vis-à-vis the other. The central idea here is that dissatisfied states are motivated to initiate military conflict, especially when they think that they stand a chance to change the status quo. Perceptions include primarily assumptions about one's rival's preferences, for example, whether one's counterpart is dissatisfied and hence, likely to initiate a military dispute. An actor's perceptions and preferences give rise to a subjective game perception, i.e. the game that an actor thinks he is playing.

Obviously, even though the subjective game perception provides the basis for one's own action, e.g., to engage in military action, perceptions can be wrong. Thus, whenever conflict occurs, the other player's actions serve as feedback and allow the first actor to check whether his conception of the overall game and his rival were correct, thus allowing for learning to occur with regard to one's perceptions. Similarly, after each conflict, actors have to assess the new status quo and decide whether he or she is satisfied with it, which will then determine his preference and help shape a new subjective game perception and a new action. According to the authors, the ongoing learning and preference evaluation on the part of individual states is the driving force behind the evolution of international rivalry.

Another interesting aspect of the model concerns how game perceptions translate into actual actions. Rationally acting states do not necessarily pursue their immediate self-interest alone, with the possibility that the game with a rival reaches a Nash equilibrium. Rather, Maoz and Mor pursue what Brams and Wittman (1981) termed "nonmyopic equilibria." Actors

make choices that not only produce favorable results for them, but are also most likely to result in a stable relationship with their counterpart, often prompting a state actor to go for second best in order to avoid instability in the future, e.g., caused by an inferior, yet profoundly dissatisfied rival.

Maoz and Mor submit their model to extensive tests, using a greater variety of different methods and sources than is usually found in this literature. After a briefly described set of computer simulations, there are two different case study approaches, one including a set of comparative case studies, the other in-depth case studies of Israeli-Egyptian and Israeli-Syrian relations. The empirical analysis is crowned, however, by an extensive quantitative analysis in which events-analysis is applied to a broad data set spanning almost 200 years of interstate rivalries. The only drawback is that readers often have to go often by faith as they are referred to the authors' prior work or existing data sets without learning much detail about them, e.g., how and why specific interstate conflicts were coded the way they were. While omitting details may leave occasional questions unanswered, the upside is that this presentation allows the authors to focus on the meat of the model fit.

How does the authors' model hold up to empirical scrutiny? All tests generate substantial support, even though that support is somewhat unevenly distributed. The notion that rivals pursue nonmyopic equilibria in their interactions received more support than the specific predictions pertaining to the evolution of enduring international rivalries. Critics might argue that there is little surprise that the rationalist stance of Maoz and Mor's is bound to run into trouble given the plethora of internal and external factors that prompt one state to go to war with another state. Still, the support garnered by their evolutionary model is solid and maybe even impressive in light of the complexity of international relations.

Beyond adding the proper caveats necessary

whenever entire states are treated as singular actors, Maoz and Mor admit that their model does face some challenges. For example, occasionally it cannot deal with the rapid transitions from peace to war and vice versa as they can occur in long-standing hate-affairs between rivaling states, and perhaps the punctuated equilibrium approach is more suitable in these cases. Further, the model, while compelling in its specificity, does not include a host of variables that have been shown to relate to war and peace. These variables are deemed exogenous and, hence, are controlled in the authors' analyses; yet, their integration in a more comprehensive model is certainly desirable.

Overall, *Bound by Struggle* is a big step ahead for the study of international rivalry. Yet, there is a lesson beyond this particular literature that goes beyond the book setting: an example for how to rigorously test one's model. The authors offer a creative way of using game theory to capture the sequential dynamics of enduring conflict—one that by no means has to be limited to the study of international relations. The hope is that other social science disciplines will be able to adapt the approach—and model successfully the dynamics of ongoing competitive relationships.

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