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Patently Misleading: Partial Implementation and Bargaining Leverage in Sino-American Negotiations on Intellectual Property Rights

Andrew Mertha and Robert Pahre

Abstract We develop a model of international negotiation in which states anticipate that the agreements they sign will only be partly implemented. The results differ significantly from theories of domestic ratification that have previously been applied to this problem. Negotiators do not try to satisfy the implementer and may even choose agreements that the implementer would explicitly reject in a ratification model. Partial implementation also makes it possible for two negotiators to reach agreements outside their usual win-set. This situation may allow one country to make extraordinary concessions, knowing that some provisions will never be fully implemented. We apply these claims to Sino-American negotiations over intellectual property rights, where implementation has been a recurrent issue. The theory enriches the theory of two-level games, which has focused much too narrowly on formal ratification without amendment as the canonical case of domestic influence over international bargaining.

All international agreements require implementation. International Monetary Fund (IMF) loan packages require policy changes that may or may not occur. Arms control treaties increasingly mandate build-downs and weapon destruction that can be difficult to verify. A central government signing an international environmental agreement may want to commit provincial and local governments to take action to implement the treaty.

Implementation has traditionally received less attention in the literature on international relations than it has in a domestic context.¹ However, a literature has

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1. Classic examples include Bardach 1977; Lindblom 1977; and Mazmanian and Sabatier 1981.

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recently grown up around the implementation of international agreements.² This research takes an international agreement as given and then investigates how well domestic actors implement its provisions in each country. A related literature takes international norms as given and then looks at norm compliance or norm violation.³

This approach generally neglects the strategic problem at the earlier negotiation phase, when two states work out the nature of any agreement. For example, Mitchell argues that implementation varies by regime characteristics that he treats as exogenous, although the same group of states negotiated both the well-implemented and poorly implemented subregimes that he studies.⁴ This raises the question: why would a state ever sign an agreement that it knows will be poorly implemented?

To understand compliance problems better, this article examines the question in a strategic framework.⁵ We assume that states negotiate with one another knowing something about the likely implementation of any agreement on both sides. We will show that partial implementation affects whether international cooperation occurs at all and which actors benefit relatively more from any cooperative agreements that two governments reach.

To analyze the strategic consequences of domestic constraints on international bargaining, we begin with Putnam's two-level framework. Scholars in this tradition have treated partial implementation in two ways: first, as a form of informal ratification, and second, as an example of involuntary defection.⁶ The analysis here differs significantly from both of these approaches.

The literature on ratification argues that if the executives anticipate a legislature's rejection of a treaty they will not, under complete information, negotiate it in the first place. With incomplete information about a legislature's preferences, they may negotiate an agreement that fails to satisfy the legislature and that is unexpectedly rejected. Whether information is complete or not, the executives may modify the agreement in the legislature's favor so as to obtain ratification.⁷

In contrast, we show that implementation can have different strategic implications than ratification. While executives may move a prospective agreement toward a domestic actors' preferences to obtain ratification approval, they may modify it away from this actor's preferences if they believe that it will only implement the agreement imperfectly. Combining an implementer-unfriendly agreement with partial implementation may even yield an outcome favorable to negotiators. A state

2. See Chayes and Chayes 1993; Checkel 2001; Jönsson and Tallberg 1998; Krauss 1993; Martin 2000; Mbaye 2001; Mitchell 1994; Simmons 2000; and von Stein 2003.

3. See for example Gurowitz 1999; and Shannon 2000 *inter alia*.

4. Mitchell 1994.

5. Martin 2000 examines a different part of the strategic framework, the legislature's willingness to delegate negotiation authority to the executive, and the use of partial implementation as an *ex post* limitation on the executive agent's actions. Jönsson and Tallberg 1998 use a strategic framework as well, but focus on postagreement compliance and renegotiation only.

6. See Kahler 1993; Martin and Sikkink 1993; and Schoppa 1993.

7. See Hammond and Prins 1998; Iida 1993; Milner 1997; Milner and Rosendorff 1997; Mo 1994 and 1995; Pahre 1997 and 2001; and Tarar 2002.

with a ratification constraint may make fewer concessions so as to obtain domestic ratification, while a state with an implementation constraint may make greater concessions knowing that they will not be implemented.

We also show that implementation differs significantly from the problem of defection. Because cooperation depends on a willingness to punish defection,⁸ partial implementation should elicit retaliation. We will show, contrary to such expectations, that anticipated partial implementation is an equilibrium that does not lead to punishment.

We make this argument both theoretically and empirically. Our empirical referent is negotiations over intellectual property rights (IPR) between the United States and China. This case provides several agreements in an environment of endemic implementation problems.⁹ As we will show, implementation problems have been common in Sino-American negotiations over this issue. Because our hypotheses mostly concern existence claims, we need to choose a case in which the hypothesized effects do in fact exist. This research design differs from the widely cited methodological advice of King, Keohane, and Verba, but it is consistent with more recent arguments about testing noncorrelative hypotheses such as necessary and/or sufficient conditions.¹⁰

The IPR case also has advantages in being asymmetric in the same way as our model. In the interest of simplicity, we develop an asymmetric model of implementation in which only one country chooses whether or not to implement the agreement. Unlike many other possible cases, the IPR case exhibits the same asymmetry, with only China deciding whether to implement agreements. In exchange, the United States agrees to drop its Section 301 case (and other possible sanctions) against China. This commitment does not require implementation, but a simple choice of whether to defect from the agreement or not.

The case of Sino-American IPR is also well suited for analyzing implementation problems because national-level agreements require action by provincial and other authorities in China to become effective. The basic form of agreement in this issue area is the Memorandum of Understanding (MOU), though other legal forms also occurred in 1995 and 1996. Whatever the legal form, these agreements did not require formal ratification in either country. In the United States, an MOU gives the U.S. Trade Representative (USTR) a document to show trade lobbyists and members of Congress as proof that its efforts are achieving some success. *De facto*, if not *de jure*, these MOUs have the force of law in China. Even so, this legal effectiveness does not necessarily produce full implementation.

Case evidence is consistent with our theoretical expectations. Beijing has sometimes made concessions to the USTR knowing that the localities would not fully implement these provisions of the MOU. The USTR also understood this strategic

8. See Axelrod 1984; Taylor 1987; and Oye 1986.

9. Mertha 2005.

10. See King, Keohane, and Verba 1994; Dion 1998; Braumoeller and Goertz 2000; and Pahre 2005.

setting and made demands that Beijing could never have accepted without an eye on the implementation stage. These were partially implemented, and this “defection” did not elicit punishment. Our model accounts for this knowing negotiation of agreements that would never be fully carried out, and for U.S. failure to punish Chinese defection even though Section 301 of U.S. trade law would have allowed it to do so. Our model also leads to some surprising propositions, including the claim that the localities will prefer partially implemented agreements, when they occur, to the status quo.

Ratification and Implementation in Two-Level Games

Putnam’s two-level framework has become the most influential way to theorize about the interaction between international and domestic politics. In this framework, international negotiations consist of two stages or levels. In the first stage, the heads of government (or their representatives) negotiate an agreement. In the second stage, domestic actors either accept or reject this agreement. Negotiations at Level I anticipate the reactions of domestic actors at Level II, modifying the agreement to make it more acceptable domestically.

Putnam’s emphasis on formal ratification has proved irresistible to those who model two-level games. Most of these scholars have modeled countries in which legislative ratification plays an important role. The United States has received the most attention, though several studies have examined European countries with important domestic divisions over policy or with minority or coalition governments.¹¹

Adding a Level II ratification game has two major effects. First, the ratifier may reject some agreements that the negotiators have reached. This means that a ratification constraint may make cooperation less likely. Ratification may also pose no constraint, and thus have no effect at all.¹² Still, adding a Level II game will never make cooperation more likely than it would be without the second level.

The Level II game also affects the distribution of gains when cooperation does occur. Schelling conjectured that executives might want a domestic constraint that tied their hands, enabling them to force the other party to make concessions. Although recent work has circumscribed the cases in which this conjecture holds,¹³ it remains valid for some preference orderings. Under other circumstances, adding the Level II game can make the executives worse off. This possibility explains why presidents may complain about congressional interference in foreign affairs

11. See Hug and König 2002; Lohmann and O’Halloran 1994; Milner 1997; Pahre 1997 and 2001; and Schneider and Cederman 1993.

12. Hammond and Prins 1998.

13. See Hammond and Prins 1998; Milner and Rosendorff 1997; Mo 1995; Pahre 1997; and Tarar 2002.

and may also account for the use of executive agreements that do not require legislative approval.¹⁴

Existing research has extended the logic of these formal ratification games to problems of less formal domestic constraints, without examining whether this extension makes analytic sense. Obtaining political support for international agreements from interest groups, party factions, central banks, and public opinion has been treated as analytically similar to formal ratification by a legislature.¹⁵ We will show, in contrast, that implementation can have effects that differ noticeably from ratification.

One reason for the difference is the nature of the ratifier/implementer's strategy space. Under formal ratification rules, the ratifier has a dichotomous choice between accepting or rejecting an agreement. The negotiators want to satisfy the ratifier to the point of ratification, but no further. The dichotomous features of the formal ratification model create discontinuities in the outcomes the theory predicts.

Implementation presents a different strategic situation. First, implementation represents a continuous policy choice. Administrative organs may fully implement an agreement, implement it partially, or not implement it at all. Second, the negotiators have no incentive to satisfy an implementer who can undo their work in any case. As a result, problems of domestic implementation fit this model of formal ratification poorly. In this respect, implementation resembles legislative amendment of treaties, a problem that the literature has largely chosen to ignore.¹⁶ Because of this focus on continuous strategies, the theory here may extend to other continuous problems, such as amendment rules within formal ratification procedures.

Implementers' Incentives: Why Does Partial Implementation Occur?

Traditional studies of foreign policy, especially those with close ties to the realist tradition, have not interested themselves in problems of implementation and compliance. This oversight has long been recognized as an important limitation of these approaches, which neglect bureaucratic and organizational implementation of central decisions.¹⁷

Recent theories of delegation explore these differences, emphasizing the principal-agent problems inherent in policymaking, whenever agents have different prefer-

14. See Lipson 1991; but Martin 2000, chap. 3.

15. See, for example, Evans 1993; Kahler 1993; Martin and Sikkink 1993; Milner 1997; Putnam 1988; and Schoppa 1993.

16. One exception is Pahre 1997, which shows that if the executive and legislature jointly choose the ratification rules, amendments will not be allowed. This nonetheless neglects the many institutional environments in which amendments may occur.

17. See Allison 1969; and Allison and Zelikow 1999.

ences than their principals.¹⁸ Because the implementation literature finds systematic cross-national variation in implementation,¹⁹ studies of implementation should be grounded in comparative studies of individual countries. We will provide such an analysis for China, which may apply, with appropriate modification, to other countries.

Local Chinese officials often invoke the traditional aphorism that “those above have their policies, we below have our countermeasures” (*shang you zhengce, xia you duice*). Functional implementation agencies—including local copyright, patent, and trademark offices—are beholden to their local governments and not to their national-level counterparts for personnel, budgetary, and other resource allocations. As a result, local government preferences often carry the day. These generally favor maintaining the status quo.

National-level officials are acutely aware of this fact. Yet their efforts to overcome local implementation obstacles face many challenges. Beijing can assign extra personnel to local implementation agencies and provide them with extra operating budgets. While this can have a positive impact on implementation, it is an incremental and expensive process. Beijing sometimes makes a public example of a specific violator of implementation rules but such high-profile action often yields ephemeral results. Beijing normally has to accept significant foot-dragging or opposition in the provinces.

Beijing’s problems have been exacerbated by reforms that have delegated increased economic decision making to the localities. Because Chinese reformers recognized the limits of a command economy run by national-level bureaucrats, the “political logic” of reform included shifting these responsibilities to sub-national governments familiar with local economic conditions.²⁰ The resulting export-led growth has been crucial to China’s ability to maintain a very high growth rate over two decades of reform, variously estimated from 8.4 percent to more than 13 percent a year.²¹ Yet this growth was strongly localized. This localization gave local governments considerable leeway to manipulate national level policy to fit their own interests, or ignore them altogether.²²

Both Beijing’s and the provinces’ preferences are affected by what the two-level literature would identify as audience costs. Beijing wants its domestic audience to view the state as a tough negotiator and defender of Chinese interests abroad. Throughout the IPR negotiations, both official press and private communications were full of rhetoric that “China would not be pushed around,” aimed in no small part at China’s domestic audience. Partial implementation may also have had the effect of making the national leadership, and “core” leader Jiang Zemin in partic-

18. On international topics, see *inter alia* Lax and Sebenius 1991; Pollack 1999; and Yarbrough and Yarbrough 1985.

19. See Mbaye 2001 for review.

20. Shirk 1993.

21. Lardy 2002.

22. Lampton 1987.

ular, appear stronger in the eyes of otherwise disaffected actors in the military or in more conservative wings of the government and the Chinese Communist Party. This was particularly important between 1993 and 1996, when Jiang was beset by potential contenders for power from all sides.²³ If the leadership were perceived as weak by guaranteeing the United States full implementation, its strength vis-à-vis the provinces could have suffered correspondingly.

China could also achieve greater implementation by making an example of one or more provinces. It does this from time to time, and made Guangdong an example in the 1990s. This does not happen more because the costs of this option tend to be relatively high. Demonstrating “toughness” by holding firm in the face of U.S. demands has a lower cost because it does not require Beijing to do anything to force the provinces to toe the line.

In short, Chinese implementation of international commitments reflects a tension between Beijing and local interests that is found throughout Chinese politics.²⁴ The main players are the central government in Beijing and locally based offices elsewhere in the country. Patterns found in some other countries, such as differences between functional agencies in the capital, are often easier to resolve than the differences between Beijing and local government.

Summary of IPR Negotiations and Implementation in China

These implementation problems set the stage for Sino-American negotiations in IPR, which help, in turn, to motivate our model. We can summarize the three sets of Sino-American IPR negotiations as follows: the 1991–92 negotiations were followed by successful, almost complete implementation, the 1994–95 negotiations were followed by little implementation in their brief existence (with piracy rates remaining over 90 percent), and the 1996 negotiations resulted in partial implementation that continues today.

The 1992 “Sino-American Memorandum of Understanding on the Protection of Intellectual Property” was signed on 17 January in Washington, D.C., after months of protracted negotiations. On 15 September, China promulgated State Council Ordinance 105, “Implementing Rules for International Copyright Treaties.” These regulations afforded foreign works the protection level that the MOU mandated. China joined the Berne Convention in October, and the Geneva Phonograms Convention in April 1993. Although the domestic administrative regulations regarding “pipeline” protection for pharmaceutical patents remained somewhat ambiguous, the Chinese considered the stipulations contained in the MOU to be binding and implemented most if not quite all of the U.S. patent-related demands.

23. Lampton 2001, 293.

24. See Huang 1996; Lampton 1987; Mertha 2005; Solinger 1996; and Yang 1994 and 1997.

This MOU focused on legislation, not enforcement. Perhaps not surprisingly, China's impressive IPR legislative activity was undermined by the lackluster enforcement of these laws in 1992–94. By 1994 it had become clear that the relatively successful implementation of the 1992 MOU was not addressing the increasing problem of local IPR enforcement. One might say that implementation levels were high on one policy dimension (legislation) but low on another (provincial enforcement).

These problems did not lead to American retaliation but did produce a new round of negotiations emphasizing enforcement issues. The negotiations that followed from 1994 to 1995 culminated in the "Exchange of Letters" of 26 February 1995. The agreement reiterated China's focus on increased enforcement at the manufacturing and retail levels, in exchange for which the United States would immediately revoke China's Special 301 designation as a "priority foreign country." The most significant aspect of the agreement was the attached "Action Plan," which the Exchange of Letters promised to implement. This Action Plan consisted of two sections. One section focused on China's IPR enforcement structure, while the other provided for "information dissemination and training, and improving the environment for intellectual laws." It also established a "special enforcement period," in which extensive resources would be brought to bear on increasing the enforcement of IPR throughout China.

Despite these provisions, the manufacture, sales, and export of IPR-violating goods actually grew immediately after the agreement was signed.²⁵ Although the authorities made some progress on enforcement, the piracy rate of computer software and audiovisual products lingered near 100 percent. Restrictions on market access for foreign audiovisual products in China remained in place, and new barriers arose.

The third round of Sino-American IPR negotiations took place in the first six months of 1996, culminating in an agreement on 17 June. This "Report on Chinese Enforcement Actions under the 1995 IPR Agreement" focused on piracy in CD factories, prescribing factory and wholesale market closures, equipment seizures, and continuing investigation and punishment. For the most part, this agreement simply restated the 1995 agreement, another indication that China had poorly implemented the latter.

By 1996 Beijing feared that the USTR-led Special 301 process would evolve into another annual "humiliation" as did the debate over most-favored nation (MFN) renewal. However, Beijing lacked the resources to mount a systematic, sustained campaign against pirates and counterfeiters. Moreover, some of the agreement's provisions were distasteful to some in the top leadership and to the bureaucracies charged with implementation.²⁶

The solution to this dilemma was partial implementation. The Chinese tried to identify the minimum number of provisions that would satisfy the United States

25. Authors' interview 98US19, 11 December 1998.

26. Authors' interviews 99BJ23, 19 July 1999; 99BJ28, 27 July 1999; and 99BJ37, 4 August 1999.

while allowing China to default on other parts of the agreement.²⁷ Chinese authorities worked with their counterparts in Washington and with U.S. copyright associations in identifying about three dozen plants in southern China that were producing illegal CDs, CD-ROMs, and laser disks. One USTR official admitted that the U.S. demand to shut down the pirate CD plants was probably the most important component of the 1996 agreement.²⁸

Targeting these factories offered the Clinton administration a tangible way to measure China's compliance with the 1996 agreement. It gave China a manageable set of tasks whereby Beijing could muster the short-term resources and political capital necessary to meet these goals. The closure of these factories provided a lethal blow to the manufacture of copyright-infringing products inside China at that time. However, the agreement did not address the issue of domestic consumption because, ironically, the U.S. copyright lobby was not particularly interested in production for the Chinese market at the time.²⁹

Because the United States refrained from further Special 301 activity against China after 1996, one might conclude that China fully implemented the 1996 agreement. Indeed, the steps that Beijing undertook in the fall and winter of 1996 and 1997 included a substantial shift of resources toward eliminating production of pirated audiovisual and literary works in China. Beijing correctly calculated that by closing down the manufacturing plants in the South, even partial implementation would provide the minimum necessary for the U.S. side to refrain from threatening future sanctions under Special 301.³⁰ At the same time, many other provisions in the agreement were left unimplemented.

We note several features of these negotiations that should help shape one's understanding of implementation problems. First, negotiators can and do anticipate implementation problems. Indeed, domestic political considerations clearly affect negotiations in ways that differ considerably from the standard formal ratification problem. Second, implementation challenges often vary across policy issues, and the players clearly understand these differences and their strategic implications.

The Nature of Partial Implementation

We will argue that partial implementation takes a particular form: the implemented policy outcome lies between the negotiated agreement and the status quo. In other words, provincial authorities and other implementers are constrained by the nature of an agreement, even when they fail to implement it fully. Imple-

27. Authors' interview 03BJ01B, 23 July 2003.

28. Authors' interview 98US19, 11 December 1998.

29. Authors' interview 98US18, 10 December 1998.

30. Mertha 2005.

menters cannot use the occasion of an agreement to change the policy agenda to raise new issues or to shift the dimensionality of an agreement.

We can characterize partial implementation along several conceptual dimensions. First, some provisions of the agreement may be implemented while others are ignored. For example, after the 1996 bilateral agreement, China successfully implemented the principal computer software-related U.S. demands, while allowing those issues specified by the pharmaceutical patent lobby to stagnate. Similarly, some provisions may be fully implemented while others are only partially implemented or ignored. China implemented the legislative provisions of the 1992 while falling far short in terms of enforcement against IPR violators.

Second, most or all of the provisions may be implemented poorly (that is, regulations are issued, resources are mobilized, but actual enforcement of the agreement is lax). The 1995 Exchange of Letters was far-reaching in scope, signaling dramatic institutional accommodations on the Chinese side. Even so, it had little short-term impact on enforcement.

A third dimension of partial implementation is temporal: the agreement may not be implemented in the time frame specified, or the time frame may be left unspecified. Throughout our interviews, the Chinese frequently complained that the United States was forcing China onto a fast track of IPR enforcement that exceeded its state capacity. This suggests that the two sides had different expectations about the speed of implementation over time.

For analytic tractability, we conceptualize all of these similarly. We may think of policy as points in space defined by axes such as more or less copyright enforcement, more or less pharmaceutical patent protection, and so on. In this spatial conceptualization of policy, partial implementation implies an outcome lying between the negotiated agreement and the status quo. Different degrees of implementation then lie on the line segment between the status quo and the agreement. Partial implementation on any of these dimensions must be understood as a continuous variable.

This line of implementation provides our basic model of the compliance problem. Figure 1 illustrates our framework, showing the United States (U), Beijing (B), the status quo (Q), the agreement (A), and the point of final implementation (M). Implementation (M) lies on the line segment between the agreement (A) and the status quo (Q). Partial implementation represents a failure to move the status quo policy all the way to the agreement policy.

To highlight the implementation problem, we present a stylized model of bargaining with implementation. We present the model formally in the Appendix and prove a series of lemmas. We develop the intuitions and several empirically observable hypotheses in the remainder of this section. Readers who examine the Appendix will note that the hypotheses are stated in natural language, so that they often repeat or overlap various lemmas stated more technically.

For our purposes, the United States is a unitary actor, represented in the negotiations by the USTR. Interest groups, members of Congress and other players obviously play an important role in the making of the USTR bargaining position

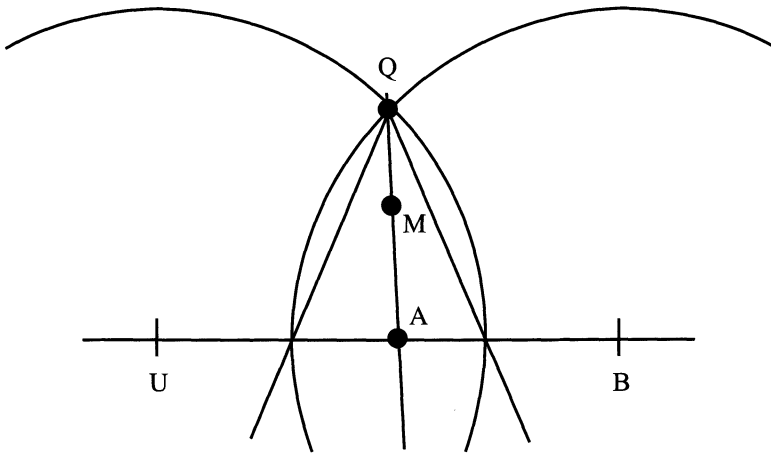


FIGURE 1. *Partial implementation*

on IPR.³¹ However, we set these aside issues of interest articulation to focus on how the implementation problem affects USTR's ability to achieve its goals in IPR.

China consists of two actors in our model, Beijing (B) and the provinces (P). This captures the central domestic political problem in the IPR regime, in which Beijing signs agreements that local authorities must implement. Local governments do not participate directly in the negotiations with the United States, though the national-level counterparts of local agencies do. While there are many different local actors, each of whom may implement agreements differently, looking at only a single implementer suffices to capture the central analytical features of the situation.

Though ideology maintains that local preferences are the same as Beijing's, in practice they differ significantly. In addition to the substance of IPR, the Beijing leadership is also interested in resolving the trade dispute, preventing future ones, avoiding economic sanctions, and implementing at least parts of the agreement to demonstrate its control over the localities. Differences in preferences between Beijing and the localities are especially important because, with few exceptions, only local authorities—and not national-level ministries and bureaus—may issue binding orders to the implementation agencies in their jurisdictions.³²

Each of these actors has an ideal point in policy space, indexed x_i for $i = \{U, B, P\}$. The IPR policy space is multidimensional. Chinese protection of intellectual property and related issues, such as trademarks, varies significantly by issue such

31. See Mertha 2005; and Zeng 2004.

32. See Barnett 1967, 72–74; Lieberthal and Oksenberg 1988, 148–49; and Lieberthal 2004, 186–88.

as pharmaceuticals, software, or audiovisual piracy. Many of the MOU's do not include an explicit quid pro quo, but the United States agrees not to impose sanctions, not to start a new Section 301 investigation, and/or to end China's designation as a "priority foreign country." Each of these provides another policy dimension.

For simplicity we assume that utility is a negative function of the distance between the final implemented outcome x_M and this ideal point. Each actor has an acceptance set consisting of all those points giving it at least as much utility as the status quo (x_Q): $a_i = \{x: |x_i - x| < |x_i - x_Q|\}$. This assumes, quite unreasonably, that the actors value each policy dimension similarly, but the assumption makes exposition of the model much easier.

Our model consists of two stages, a Level I negotiation stage and a Level II implementation stage. In the negotiation stage, the USTR (U) and Beijing (B) reach some agreement A at x_A that differs from the status quo Q at x_Q . Without implementation, B and U would negotiate an agreement along their contract curve, defined as the line segment $bu = x_B x_U = \{x_A: x = x_U + (1 - \alpha)x_B, \alpha \in [0, 1]\}$. Without implementation, U and B will only agree to points on the contract curve that both prefer to the status quo (we show below that the implementation game allows for additional possibilities). This means that the intergovernmental win-set, or the win-set when there are no implementers, is $w_{UB} = bu \cap a_U \cap a_B$. Figure 2 illustrates this outcome, with the heavy shaded line representing the intergovernmental win-set.

Our equilibrium concept follows cooperative game theory in that we do not examine enforcement of agreements. We also do not model the bargaining process but consider only the set of all possible agreements between the United States and

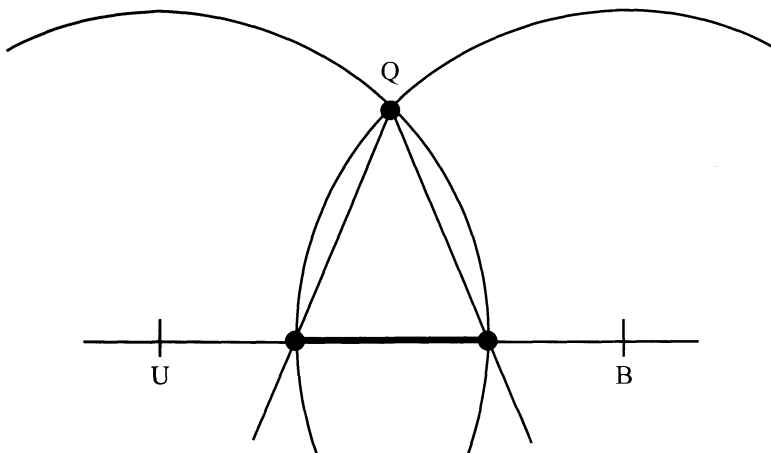


FIGURE 2. *The intergovernmental win-set*

China.³³ It would be straightforward to extend our model in these directions to encompass these other issues, but these complications are not necessary for our purposes here.

At Level II, the authorities in Chinese provinces (P) must implement the agreement. Implementation entails moving policy from the status quo Q to the final implemented point M at x_M , that is, as movement along the line segment between A and Q (aq). This line segment can be defined as $aq = x_A x_Q = \{x: x = \alpha A + (1 - \alpha)Q, \alpha \in [0, 1]\}$. Partial implementation results in an implemented point M on aq, and can be defined by a degree of implementation $m \in [0, 1]$ defining a point $x_M = mA + (1 - m)Q$. Full implementation implies $m = 1$, while nonimplementation implies $m = 0$.

We assume that the two governments would rather reach an agreement at A that is implemented to M instead of simply reaching agreement at M. Audience effects in the United States provide the most important reason for this assumption. Domestic interest groups would rather have the USTR negotiate a strong agreement that is imperfectly implemented than settle for a weak agreement that sets a poor precedent for future negotiations. One reason for this preference is a desire to establish more ambitious objectives for future negotiations. We capture some of this dynamic process in a later section, where we show that these domestic groups' hopes are not misplaced. At a theoretical level, we prefer in this article to incorporate U.S. audience effects into USTR preferences and not to account for them explicitly in this model. Ongoing research seeks to incorporate these audience costs explicitly,³⁴ pointing toward an eventual theory that can handle both audience costs and implementation simultaneously.

The implementer P will choose the point on aq closest to its ideal point x_P . To find this, we define the projection of x_P onto the line AQ as P^* . Figure 3 illustrates one such case, in which the agreement A1 is implemented as M. If P^* lies on aq, then P will choose a degree of implementation (m^*) such that P^* results. If P^* lies on AQ but outside aq, then P will choose either full implementation ($m = 1$, so $x_M = x_A$) or complete nonimplementation ($m = 0$, so $x_M = x_Q$), whichever is closer to its ideal point x_P (see Lemma 4 in Appendix). Agreement at the point A2, for example, would be fully implemented. The implementation game retains the distributional problems in other bargaining problems because the United States prefers M (A1) to A2, while Beijing prefers A2 to M (A1).

Notice, incidentally, that the three points B, U, and Q define a plane, no matter how many policy dimensions states negotiate over. This means that the two-dimensional representation in the figures shows the nature of the bargaining problem even in multidimensional space. Adding the implementer P may add a third dimension to the effective policy space, but the constrained role of the imple-

33. For a similar approach, see Hammond and Prins 1998. For a critical evaluation of the alternatives, see Butler 2004.

34. Pahre 2003.

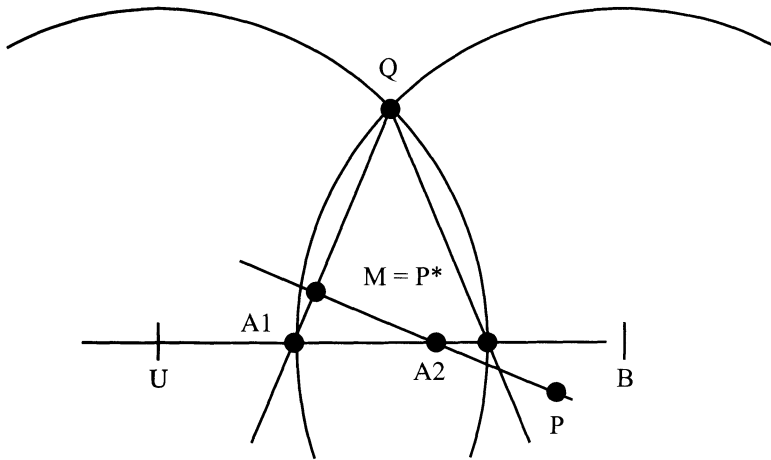


FIGURE 3. *The implementation problem*

menter means that even this new dimension does not change the strategic problem (see Lemma 3 in the Appendix). P implements the projection of its ideal point onto the line segment aq , so this implemented point (M) will remain on the BUQ plane even if P is off it.

One interesting implication of the model appears immediately. U and B implicitly negotiate over implemented points and not over the intergovernmental contract curve. This means that some agreements that would not be equilibria in the intergovernmental game are possible precisely because they will not be fully implemented. In short we offer the following hypothesis:

H1. Adding an implementation constraint can expand the set of possible agreements before implementation.

Figure 4 illustrates this possibility. Agreement A lies outside the intergovernmental win-set, but both governments prefer the implemented point M to the status quo Q. The distributional problem remains, since an alternative agreement A^* would be implemented to $M^* = P$; the United States prefers M to M^* , while Beijing prefers M^* to M.

The result in Hypothesis 1 occurs because acceptance sets are concave. As a result, a point outside the acceptance set could yield a point on the implementation chord that is inside the acceptance set. This intuition is that a state can agree to something that it would not normally accept, knowing that the implementer will take away the concessions. In our case study, Beijing may make concessions to the United States knowing that those concessions will only be partially implemented. Because of this, partial implementation affects the distribution of benefits in Beijing's favor.

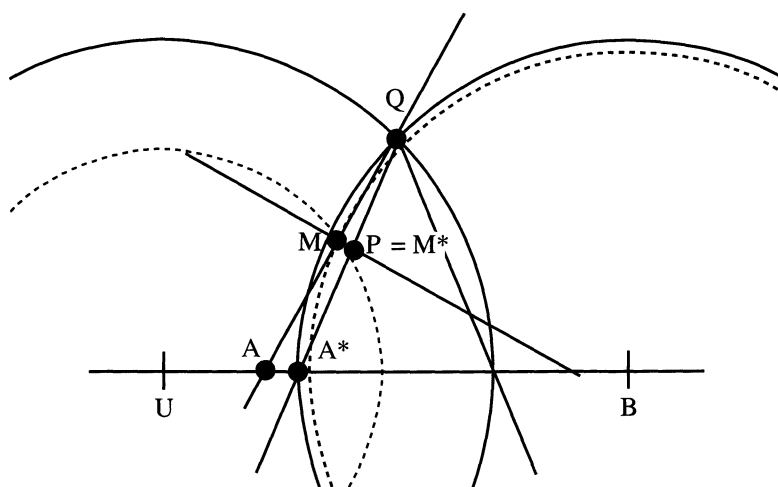


FIGURE 4. Agreements off the contract curve

This result differs significantly from a ratification game. In a ratification game, the governments try to satisfy each ratifier minimally, and they make changes in the agreement that make the ratifier better off. Here, the governments may make changes in an agreement that make the implementer worse off, knowing that the implementer will not fully implement the agreement.

As this implies, we assume that both governments anticipate P's implementation of the agreement A. If P will not implement the agreement at all ($M = Q$), then the governments are indifferent between the outcome with or without an agreement. We assume that epsilon negotiating costs keep them from negotiating an agreement in the first place. Otherwise, the governments will negotiate an agreement that will be either partially or fully implemented. This implies the following hypothesis:

H2: Either full or partial implementation may be an outcome of the implementation game; by assumption, complete nonimplementation ($m = 0$) is not an outcome.

Many believe that poor compliance levels make international agreements impossible. Our analysis suggests instead that states can reach agreement no matter how poor the likely implementation, as long as poor implementation is anticipated. This implies that the United States will be willing to negotiate agreements with China even if it anticipates that implementation will be very poor.

Partial implementation has effects that differ from formal ratification. This is true in terms of both process (what agreements can be proposed and whether they are implemented or ratified) as well as substance (the final policy outcome). On the former,

H3: Governments may negotiate agreements that the provinces would reject if they had ratification power.

Figure 5 illustrates this hypothesis. Any province with ratification authority would reject an agreement such as A that lies on the international contract curve. In a ratification game, U and B would be forced to negotiate an agreement lying in the intersection of the acceptance sets for U , B , and P , subject to the constraint that the agreement be Pareto-efficient within that set for U and B . The point A^* represents such an agreement. In an implementation setting, U and B negotiate an agreement A on their contract curve, which P implements only partly. Again, the outcome will lie within the intersection of acceptance sets, but not necessarily on the feasible Pareto set found in the ratification case. Both the process and the final policy outcome differ across games.

Though P would reject the agreement A if it had ratification power, the province nonetheless ends up with a policy M that it prefers to the status quo Q . This feature of the game is general:

H4: The province P always weakly prefers the implemented point M to both the status quo Q and the agreement A .

This follows from the fact that P 's preferences are convex. It is easiest to see this geometrically because P - M - A is a right triangle with a right angle at M ; the distance PM must be less than the length of the hypotenuse PA . We may note that it is also true in the ratification game that the domestic actor will prefer an agreement A to the status quo, else it would not ratify that agreement. In this respect the two games are similar.

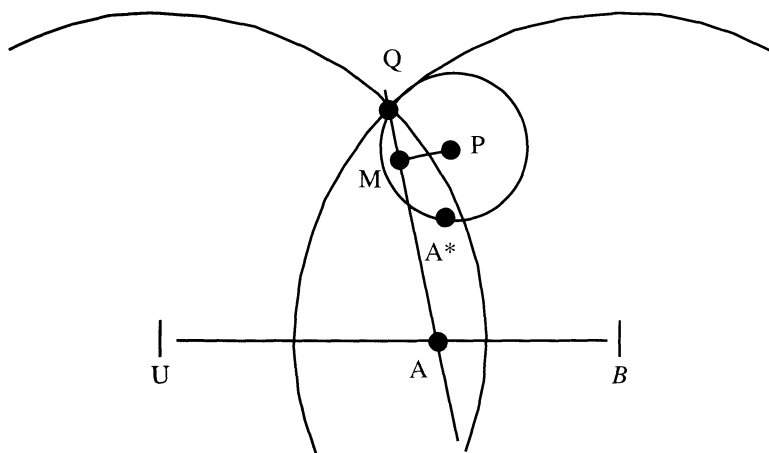


FIGURE 5. *Partial implementation instead of rejection*

Unsurprisingly, then, provinces like having implementation authority. This not only gives them a better outcome than would full implementation of the agreement, but also a better outcome than the status quo. However, we are unable to say whether provinces would systematically prefer either implementation or ratification powers.

Less obviously, Hypothesis 4 means that the provinces prefer M to suffering the costs of American retaliation. Conventional retaliation, not analyzed here, would likely involve either a tit-for-tat metastrategy or a stronger punishment such as “Grim Trigger.” Either would return the outcome to the status quo. However, the provinces want to avoid this outcome in equilibrium, preferring partial implementation.

While the provinces prefer having implementation authority to having no Level II powers, the executives have more mixed evaluations (see Lemma 6 in Appendix). Figure 6 illustrates a case in which both governments prefer A to A* but prefer M* to M. It is hard to find examples of such configurations in Sino-American relations but they may exist in negotiations between some other countries.

Many people’s initial intuition is that some government might make substantive concessions in exchange for better implementation. Perhaps surprisingly, this does not happen. Figure 7 illustrates the problem. For any implemented point M from

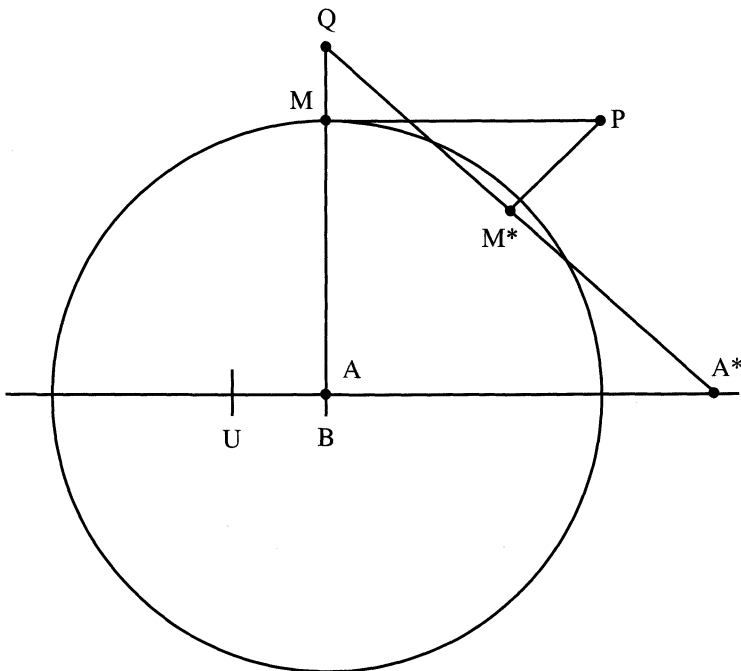


FIGURE 6. *Both governments desire better implementation*

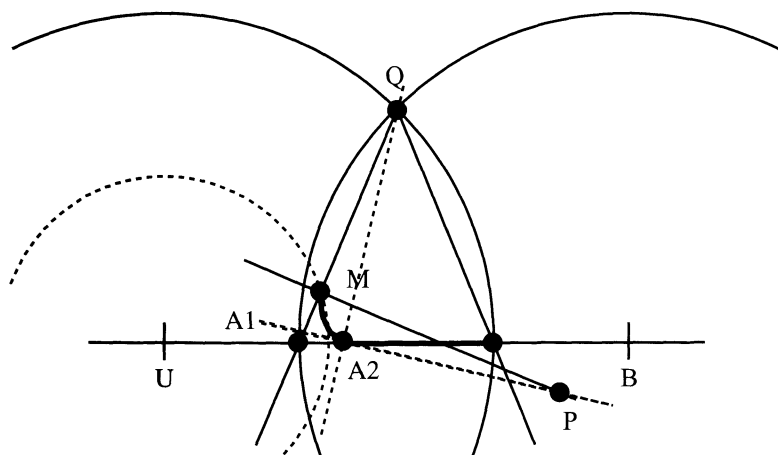


FIGURE 7. *The difficulties of avoiding partial implementation*

agreement A1, the states would have to move the agreement to A2 to achieve full implementation. This point is better for Beijing, but worse for the United States than M. An intermediate agreement would not solve the distributional problem implicit in the implementation stage. Though any agreement between A1 and A2 would make both states better off than M, none would be fully implemented. Their implemented points would lie on an arc connecting M and A2, making one state better off and the other worse. The Appendix shows that these dilemmas are general for all partially implemented agreements:

H5: In equilibrium, each partially implemented outcome M is Pareto-efficient so that the two states can find no fully implementable agreement that both prefer to M, nor another partially implemented M that both prefer to M; as a result, U and B negotiate over an implicit contract curve that may differ from the nonimplementation contract curve.

This means that partial implementation is an equilibrium.

In effect, then, when U and B anticipate partial implementation, they do not really negotiate over the set of points on their contract curve. Instead, they implicitly negotiate over the set of implemented points M, visible in Figure 7. Again, the outcome differs from the win-set in the ratification game, shown as a hatched wide line in the figure.

Given the governments' contestation over implementation, it may be surprising that partial implementation does not produce trade wars or other cycles of defec-

tion and retaliation.³⁵ The fact that both governments rationally anticipate partial implementation means that partial implementation is not treated as defection, either voluntary or involuntary, and does not bring about punishment. At least in a complete information setting,

H6: Partial implementation does not elicit retaliation or punishment.

Because retaliation does not occur, both governments accept the implemented outcome.

Finally, let us consider repeated plays of the implementation game. Though we have not modeled its temporal dimension, implementation is clearly a process that occurs over some period of time. The simplest way to capture this process is to imagine negotiations as a repeated series of the implementation game. In other words, U and B negotiate A, which P implements to M; after this, with the old M as the status quo, U and B may negotiate a new A*, which P implements to M*. We will assume here that U, B, and P make their decisions in each iteration myopically, without reference to subsequent iterations of the game.³⁶

The implementation model here has an endogenous explanation for repeated negotiations:

H7. The implementation game may lead to a series of agreements over time when played myopically.

Any agreement is efficient only in the sense that it is the best the executives can do subject to the implementation constraints. Yesterday's agreement, once implemented, becomes a new status quo for future negotiations. Because the implementation constraint is a function of the status quo (the point M lies on the line segment aq), the implementation constraint is different in future rounds. As a result, U and B negotiate tomorrow subject to a different constraint than they faced today. Figure 8 shows this process.

The implications of Hypothesis 7 differ significantly from the standard ratification game and in most other two-level spatial models. In these other models, negotiation can only occur once because the resulting agreement is Pareto-efficient for the executives. The only reasonable explanation for new negotiations in the standard framework would be a change in the actors' preferences.³⁷ Here, the chang-

35. See Axelrod 1984 for cycles of retaliation. The problem of partial implementation and retaliation in repeated play, especially in a noisy environment, is too complicated to examine here. See Wu and Axelrod 1995 for treatment.

36. The myopia assumption might reflect changes of government (or simply personnel) in both countries. Though officially disfavored by rational-choice theorists, myopia is implicit—but unacknowledged—in just about any extensive-form game that represents a recurrent situation or decision problem.

37. Lake and Powell 1999.

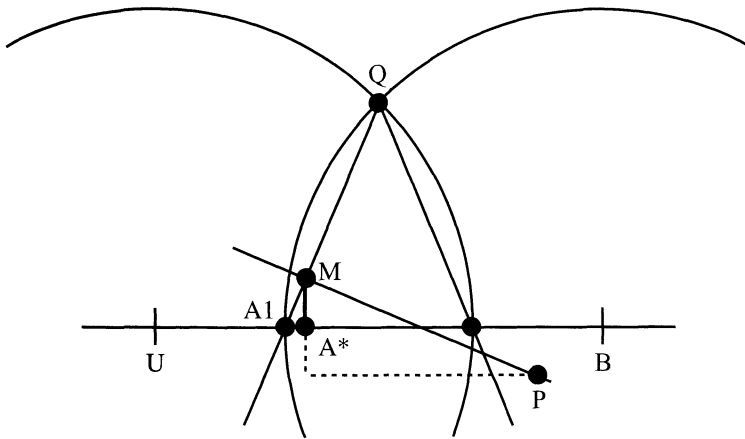


FIGURE 8. *Repeated negotiation and implementation*

ing constraint makes it possible to see a series of partially implemented agreements over time. This result provides a foundation for understanding theoretically an empirical pattern that nonformal researchers such as Kahler and Martin and Sikkink have noticed and rightly found puzzling for existing theory.³⁸ Hypothesis 7 is a weak result in that it makes only an existence claim,³⁹ but this claim has support both in our case and in some other empirical studies of two-level games.

Hypothesis 7 also resonates in our case study, complementing the institutional facts on the ground. Under American law, the United States does not retaliate immediately on finding a treaty violation. Instead, implementation problems trigger one of several processes that include negotiation with China or any other country. For example, whenever China was off the “priority foreign country” list under Special 301, U.S. trade law required putting it back on the list and starting the process again. Both in the model and in the real world, the result may seem a charade. Both countries negotiate an agreement, knowing that it will be only partially implemented. However, we prefer to see this process in terms of institutional constraints. By introducing a simple model of partial implementation—constraining recalcitrant agencies to choose a set of policies between the agreement and the status quo—we can explain why this outcome looks the way it does. Characterizing an equilibrium in this way and identifying the causal mechanisms at work empirically is an underappreciated way to test the claims of formal theories.⁴⁰

In summary, this section we have developed a model of partial implementation and have derived several hypotheses about behavior in an implementation game.

38. See Kahler 1993; and Martin and Sikkink 1993.

39. Pahre 2005.

40. Pahre 2005.

We also compared the results of this game with the ratification game that has dominated the two-level literature. These differing hypotheses show the importance of distinguishing the implementation game from the ratification game in terms of bargaining process, the distribution of benefits, and enforcement. We now turn to an application of the game to demonstrate the empirical usefulness of this approach to implementation problems.

An Analytical Narrative of Sino-American IPR Negotiations

Most of the hypotheses developed in the previous section do not explicitly relate changes in an independent variable to changes in a dependent variable. Instead, most offer existence claims or impossibility claims, embedded in a theory that makes causal claims about state behavior. Thanks to the formal model, these claims are logically interrelated and provide an explanation of what we observe. Given their structure, these claims are well suited to an analytic narrative.⁴¹

From the start, implementation issues play an implicit role in bargaining, as we would expect from Hypotheses 2 and 5. At the start of most trade negotiations with the United States, the USTR presents Beijing with a set of demands. The lead Chinese negotiating agency, the Ministry of Foreign Trade and Economic Cooperation (MOFTEC, now the Ministry of Commerce), disseminates these demands for review by relevant functional ministries and bureaus. National-level ministries and bureaus must, in turn, determine the broad contours of what their local counterparts can implement. MOFTEC requires each unit to present a “worst case” scenario of the maximum concessions it can make, information that MOFTEC uses to create its own bargaining position.⁴² This position must be approved by the State Council, China’s highest government organ.⁴³ Implementers’ preferences are thus indirectly channeled up to the national level, though the center has various other interests of its own.

Once approved, only the State Council can alter this carefully constructed bargaining position. Several times during any given round of negotiations, the State Council unilaterally intervenes to break a stalemate, thus moving the prospective agreement further away from the implementer’s preferences. Given the process for determining China’s original position, this change requires agreeing to something that domestic agencies had already defined as unimplementable. In this way, Beijing anticipates partial implementation of these concessions.⁴⁴

Hypothesis 1 maintains that adding an implementation constraint can expand the set of possible agreements before implementation. The case study evidence

41. See Bates et al. 1998 and 2000; Elster 2000; and Pahre 2005.

42. Authors’ interviews 99BJ23, 19 July 1999; 99BJ15B, 6 August 1999.

43. Authors’ interview 03BJ01B, 23 July 2003.

44. Authors’ interview 98HK04, 23 June 1998.

bears this out. In the closing rounds of the talks in late 1994, the United States added a new demand: that China open up its market for the production, distribution, and sales of foreign audiovisual products. The Chinese government, particularly the Ministry of Culture, strongly opposed this because they feared that the long-term effects of exposure to cultural products could have negative “ideological” repercussions.⁴⁵ Beijing only relented on this issue at the last minute, securing an agreement with the full expectation that it would not be implemented.⁴⁶ Indeed, once Beijing agreed to these demands, albeit in an ambiguous way—the final debate reportedly centered on how to translate “to produce”—the Chinese side failed to implement them.⁴⁷

These agreements included significant ambiguities for local governments to exploit. The implementing instructions often took the form of a nonbinding “notice” (*tongzhi*) that did not require full obedience—in contrast to an “order,” *mingling*.⁴⁸ These notices might require that local agencies “make every effort” in a particular area, or “be particularly thorough” in cracking down on certain activities. Full and genuine compliance with agreements therefore almost never took place, because the implementation instructions did not actually require local agencies to implement agreements fully.

Nonimplementation took various forms, some quite brazen. Some local governments informed IP pirates a few days before a scheduled raid.⁴⁹ Others turned a blind eye to the ever present audiovisual shops that displayed antipiracy hotline numbers while continuing to sell pirated merchandise. In addition,

Local officials have been known to confiscate goods, machinery, and equipment only to return these materials to counterfeiters once enforcement actions have been concluded. Moreover, since local enforcement officials have broad discretion in determining the amount of fines and penalties and are not constrained by mandatory minimum limits, many local enforcement agencies impose trivial fines.⁵⁰

The market access provisions of the 1995 agreement were particularly easy to ignore because of the opacity of the culture apparatus.

Because of partial implementation, Beijing could negotiate agreements that the provinces would have rejected if they had ratification power, consistent with Hypothesis 3. Nonetheless, partial implementation of these otherwise unacceptable agreements left the provinces better off than the status quo (Hypothesis 4). For one, it provided opportunities to undertake other activities that local govern-

45. See authors' interview 99BJ28, 27 July 1999; and Lynch 1999.

46. Authors' interview 03BJ01B, 23 July 2003.

47. Authors' interview 98HK04, 23 June 1998.

48. Lieberthal 1978.

49. Authors' interview 98CQ24, 17 August 1998.

50. China Anti-Counterfeiting Coalition 1999, 25.

ments desired, such as the antipornography campaigns.⁵¹ Partial implementation also enabled local governments to increase their political capital vis-à-vis Beijing.

It is important to recognize that provincial foot-dragging never reached the level of complete nonimplementation, just as Hypothesis 2 would expect. Beijing always made a point of finding “big and important cases” (*zhong da anjian*) of violations or noncompliance that it could quash publicly. This helped the center demonstrate to both internal and external audiences that it was genuinely “getting tough” on the violators.⁵² As long as the provinces showed some degree of compliance with the letter of the law, such as sponsoring conferences on IPR or publicly destroying confiscated merchandise, they avoided the costs of fuller compliance. The localities also knew that too much nonimplementation could elicit retaliation from the center (or from the United States), so they would alter their behavior to prevent this. In short, we do not see total provincial stonewalling that might lead to retaliation from either Beijing or Washington, but a more subtle game in which the provinces enforce some IP rules but ignore others.

To satisfy the United States, the central authorities mobilized an unprecedented cluster of government bureaucracies, military and paramilitary units, and mass organizations, expending a considerable degree of political capital as well as a great deal of money in the process. The most important such action came in a campaign dubbed the 1996–97 “winter action.”⁵³ Beijing realized that the United States would not impose trade sanctions if China were showing “good faith,” even if this meant only partial implementation.⁵⁴ This is consistent with Hypothesis 6’s prediction that retaliation for anticipated partial implementation does not occur.

The foregoing does not imply that the Chinese negotiators have perfect information about what was going on in the localities, though our interviews surprised us by revealing just how good this information could be, reflecting both formal and informal channels.⁵⁵ The central government knew how poorly equipped their local counterparts were, especially in the area of copyright. One former negotiator added that the officials in local offices were of such low caliber (*banquan guanli de ren shi wuneng de*) that if there were ten or even fifty times more of them the result would be the same. Another national official compared national policy to a beam of light: “it is very bright in Beijing, but by the time it reaches the lowest levels, it is already dark.”⁵⁶

More important for our interpretation of these negotiations, the United States also expected partial implementation of these agreements. U.S. negotiators Lee

51. See authors’ interview 98SH24, 15 June 1998; Mertha 2005; and O’Brien and Li 1999.

52. See Charlene Fu, “Company Chief Executed for Illegal Bond Scheme,” Associated Press, 11 April 1994; and Xiangwei Wang, “Mainland’s Corruption Crackdown Continues: Three More Provincial Leaders Will be Put on Trial in the Next Few Months, Serving as a Strong Warning to Others,” *South China Morning Post*, 6 May 2003, 6.

53. See authors’ interview 03BJ01B, 23 July 2003; and Mertha 2005.

54. Authors’ interview 03BJ01B, 23 July 2003.

55. Authors’ interview 99BJ23, 19 July 1999.

56. Authors’ interview 99BJ15A, 24 March 1999.

Sands and Deborah Lehr actively prepared for the negotiations by going to Beijing, Shanghai, Guangdong, and Hong Kong to assess conditions on the ground. They met regularly with industry to gather further information, which they confirmed independently with the consulates and embassies in China and Hong Kong.⁵⁷ It is not surprising, then, that one former USTR negotiator argued that she knew that implementation problems would be “absolutely inevitable” after the 1991–92 negotiations.⁵⁸

These negotiators were sometimes better informed than their Chinese interlocutors. For example, Sands once called MOFTEC’s bluff by offering to go to a certain ministry to see if they were using pirated software themselves, knowing full well that they were.⁵⁹ U.S. negotiators would also dump pirated CD-ROMs on the negotiating table when the Chinese claimed that piracy was not a problem.⁶⁰

Knowing that partial implementation was inevitable, the United States was primarily constrained by the “red face test”: could the USTR state at a press conference, with a straight face, that the agreement was a good one. This usually meant that USTR would have to expect the core issues to be largely implemented.⁶¹ By 1996, this red-face test hinged on CD manufacturing facilities in south China:⁶²

the demand to shut down the pirate CD plants was by far the most high-profile (and probably the most important) component of the [agreement] Certainly the Chinese believed that this was the most important issue to the US . . . it appears that the Chinese decided that they would do the thing that the US wanted most in order to keep the US off their backs where China was less compliant. . . .

Though the United States wanted higher levels of compliance, it decided to be politically realistic about levels of Chinese compliance. The Chinese understood the USTR’s needs. These issues even appeared in the Chinese press in an article documenting actions taken against software and CD pirates in Guangdong.⁶³ Our interviews even suggest in an impressionistic way that the USTR and MOFTEC signaled each other informally on exactly this question.

The United States also become involved in some implementation. For example, U.S. officials got Guangdong officials to move forward on enforcement by threatening to bring Guangzhou-based industries to the forefront of the U.S. retaliation list.⁶⁴

57. See authors’ interviews 98US10B, 4 December 1998; 98US14, 8 December 1998; and 99BJ16, 24 March 1999.

58. Authors’ interview 98US08, 30 November 1998.

59. Authors’ interview 98US15, 8 December 1998.

60. Authors’ interview 98US14, 8 December 1998.

61. Authors’ interview 98US10A, 3 December 1998.

62. Authors’ interview 98US19, 11 December 1998.

63. *Wen Wei Po*, “Sino-American Trade War Can Hopefully Be Checked—Written on the Eve of the Re-Opening of the Sino-American IPR Protection Talks,” 11 June 1996, A2, translated in FBIS.

64. Authors’ interview 98US20, 11 December 1998.

Consistent with Hypothesis 5, the resulting agreements seem to be efficient, given the constraints negotiators faced. It is hard to imagine any provisions that both Beijing and the USTR could have agreed on and that would have been better implemented than the agreements they actually reached. For example, the United States was on record as wanting China to join international IPR regimes more quickly under the 1992 MOU, but it could not force Beijing to speed up the process. Some demands in 1995–96, such as opening China’s culture market to foreign competition, were completely unacceptable to the Chinese. On the other side, Beijing would have preferred to save the money and political capital needed for the 1996–97 “winter action,” but the United States would not have accepted this. Even so, the USTR understood the implementation problems that Beijing faced and made its cost-benefit calculations about the agreement as implemented.

To summarize, the history of Chinese intellectual property protection in the 1990s was consistently been one of partial implementation. Consistent with Hypothesis 6, this “defection” has not elicited retaliation, though the United States has used the threat of retaliation to begin a new cycle of bargaining.⁶⁵ This pattern is consistent with the claim of Hypothesis 7 that the implementation game may lead to a series of agreements over time when played myopically. Specifically, the 1992 MOU focused primarily on legislation and on pressuring China to join international IPR regimes such as the Berne Convention. China largely implemented this agreement, though the local governments had little to do with these measures. Once the 1992 MOU had been implemented, it became the new status quo for the 1994–95 negotiations that stressed local enforcement of the provisions of the 1992 MOU and the 1995 agreement. The latter agreement was particularly wide-ranging and provided the United States with an unprecedented international agreement in which local implementation was the main substantive area covered in the agreement.⁶⁶ As we have argued above, this was only possible because the Chinese were not going to implement the entire agreement in the time frame the United States demanded.

The events surrounding the 1996 agreement represent the only possible anomaly for our theory. This agreement largely restated the 1995 agreement. Because the first agreement had such a short life, we hesitate to classify it as completely unimplemented, which would contradict Hypothesis 2. It is interesting that the United States did not retaliate, though it did use Section 301 to hold the possibility of such retaliation over China’s head. It appears that the events of 1995–96 provided the learning that both states needed to understand the minimum requirements of the other.

Our case study has addressed three aspects of our model and of cooperation theory in general: bargaining, distribution, and enforcement.⁶⁷ We have argued theo-

65. Compare Jönsson and Tallberg 1998.

66. Authors’ interview 98US09, 30 November 1998.

67. Koremenos et al. 2001.

retically and empirically that anticipating partial implementation can open up the win-set to encompass agreements that would be infeasible if implemented perfectly. Implementation also affects the distribution of benefits from any agreement. It moves policy toward the ideal point of the provinces and sometimes also toward Beijing's preferred outcome. The most striking feature on the enforcement dimension is the lack of retaliation, which is replaced by a cycle of implementation and renegotiation. On all three dimensions, the partial implementation game differs from existing two-level theory.

Rival Interpretations

The above analytic narrative provides a test of our model by showing that some of our more surprising claims do occur in the real world. This narrative, like other case study methods, encourages the researcher to consider rival explanations explicitly instead of just testing hypotheses against a null hypothesis.⁶⁸ This section will consider one alternative explanation for the cycle of implementation and renegotiation, and a second alternative for the U.S. failure to retaliate for Chinese noncompliance.

One explanation for any change of outcomes in a rational choice theory is that actors' preferences changed.⁶⁹ This explanation would suggest that renegotiating agreements does not emerge endogenously from the IPR game, but instead reflects changing preferences in either Beijing or Washington. This rival claim does not seem plausible for the period examined here. The United States does not see a break in IPR policy from the first Bush administration (1992 negotiations) to the Clinton administration (1995 and 1996 negotiations), and there are no major changes within the Clinton administration. Nor does the United States take a different approach to any issue over time, but tends instead to add new issues to the agenda. China exhibits similar continuity in preferences throughout this period. Given this continuity in preferences and game structure, an endogenous explanation of repeated negotiations is much more plausible.

Though preferences remained constant, we have detected one instance in which a renegotiation reflected issues outside our theory in its current form. It appears that the Chinese side was unsure which parts of the agreement to implement to stave off further Section 301-led action in 1995. As a result, almost no part of the 1995 agreement was implemented in the year following the agreement. This brought both sides back to the table in 1996, where the Chinese learned that the USTR's primary concern was the three dozen CD plants in South China. In response, Beijing redistributed the necessary political and other capital toward closing these

68. Bates et al. 1998; and Pahre 2005.

69. Lake and Powell 1999; and Snidal 1986.

plants. Adding incomplete information about preferences could easily bring this issue into a future version of our model.

The second issue is the question of American nonretaliation, where our interpretation differs somewhat from standard two-level accounts⁷⁰ and Zeng's recent book on Sino-American trade negotiations.⁷¹ Existing approaches treat interest groups as if they were ratifiers of both trade agreements and of potential sanctioning legislation, though these groups lack any such formal power. On this view, groups required certain concessions if they were to accept these agreements. When faced with violations, these groups faced the strategic choice of accepting half a loaf or supporting sanctions against China that might achieve better implementation but would more likely lead to a total breakdown of the IPR negotiation process. If dissatisfied, they could initiate a new Special 301 investigation.

It is important to note, first, that a strong interest group account would ignore certain institutional facts. The USTR was effectively isolated from outside interference in determining its course of action under Special 301 of the 1988 Omnibus Trade and Competitiveness Act, though groups could express their views during the public comment stage. The Special 301 provision compelled the USTR to act when its conditions were met, removing any discretion.⁷²

These lobbies provided one source of the USTR's interests in the intellectual property trade regime. By affecting preferences—which lie outside any rational-choice model—they also helped shape the game. Zeng has pointed to sectors such as automobiles, aircraft, retail, toy manufacturers, greeting card manufacturers, bicycle importers, and footwear manufacturers as those who lobbied against imposing sanctions on China.⁷³ Recognizing their somewhat different interests, almost all industries agreed on the importance of presenting a united front to keep China from attempting a divide-and-conquer strategy against them.⁷⁴

This united front helped make the Section 301 process more credible. Officials also believed that it would be easier to use Section 301 against China than against other countries, such as Japan, because China was not then a member of the GATT, was not an American ally, did not have permanent MFN relations with the United States, and remained unpopular in the United States after the 1989 Tiananmen Square turbulence. Moreover, the United States stood to lose only about \$2 billion in trade from likely sanctions (out of an overall trade volume of \$40 billion). China would suffer much more—not so much in trade, but from a significant loss of investor confidence during a trade war.

U.S. negotiators were happy to have the sanctions weapon available.⁷⁵ In addition to the intrinsic merit of the specific issues under negotiation, the IPR issue

70. See, for example, Evans, Jacobson, and Putnam 1993.

71. Zeng 2004.

72. Authors' interview 98US10A, 3 December 1998; see also Puckett and Reynolds 1996.

73. Zeng 2004, 170–79.

74. Authors' interview 98US14, 7 December 1998.

75. See authors' interviews 98US10A, 3 December 1998; and 99BJ16, 24 March 1999.

offered some strategic advantages. IPR gave the USTR the opportunity to act tough with China on a negotiable issue, in contrast to the annual dispute over human rights and the renewal of MFN treatment.⁷⁶ On this strategic dimension, non-IPR industry groups were not averse to the way the USTR used the IPR issue to leverage the Chinese either because it did not hurt them directly (as the human rights-MFN linkage could) or because they could use it to leverage the Chinese on other issues. This would not have been possible if a critical mass of industry was firmly opposed to the USTR's pursuing of the IPR issue. The issue served these purposes very well. One USTR official expressed his amazement that the IPR issue had enjoyed as long a shelf life as it did; such durability was unprecedented among trade issues, in his view.⁷⁷

In sum, the United States was ready to impose sanctions, but, as we have suggested, it was rational not to use it in response to partial compliance. Domestic groups helped shape USTR preferences, but did not have the ability to block sanctions if the USTR believed them appropriate. Even without ratification power, these groups have some ability to make life difficult for American negotiators, but this option is costly for the groups as for USTR. The main reason why the IPR issue finally fell from the radar was due to the fact that the Chinese engaged in partial compliance; having achieved a reasonable amount of success, the USTR moved on to other issues.⁷⁸ This partial success satisfied some groups. The executive's interests also tended to lie elsewhere, as Zeng notes:⁷⁹

At first glance it appears that the administration adopted a sufficiently tough stance on the IPR issue in order to protect American jobs and economic interests. But a more careful analysis would suggest that the White House did not really want to see a trade war with China and that it threatened sanctions on IPR in part to defuse the broader movement in Congress to terminate China's preferential trading status.

Important internal constituencies, such as the U.S. State Department, also favored a softer line toward China for a variety of economic and general foreign policy reasons. All these issues helped shape the U.S. ideal point, but did not prevent retaliation.

Conclusion

This article has developed a model of international negotiation in which states anticipate that the agreements they sign will only be partly implemented. The results differ significantly from theories of domestic ratification and theories of involun-

76. Authors' interview 98HK06, 24 June 1998.

77. Authors' interview 98US19, 11 December 1998.

78. Authors' interviews 98US16, 9 December 1998; and 98US19, 11 December 1998.

79. Zeng 2004, 177.

tary defection. Negotiators do not try to satisfy the implementer and may even choose agreements the implementer would explicitly reject in a ratification model. Partial implementation also makes it possible for two negotiators to reach agreements outside their usual win-set. This may allow one country to make extraordinary concessions, knowing that some provisions will never be fully implemented. Whatever the agreement, partial implementation is not viewed as defection and is not punished. Instead, states anticipate implementation and negotiate along an implied contract curve.

Future research could build on this analysis by varying several features of our model that bear noting. First, both the model and the case are one-sided in that only China implements agreements. Many other agreements must be implemented by all parties, as in the case of the European Union, where compliance levels are well studied. Presumably the implementers in each country control implementation on different policy dimensions.

The IPR case also works differently than implementation of World Trade Organization (WTO) agreements, and possible retaliation against noncompliers. For example, Milner and Rosendorff's model of WTO disputes assumes that some violations are unanticipated. When an unanticipated violation occurs, it may lead to enforcement actions.⁸⁰ In contrast, we have argued that the United States anticipated partial implementation of IPR agreements, with different consequences. Because we do not observe any retaliation in the Sino-American case, it is fair to conclude that our complete-information model better captures this problem than does Milner and Rosendorff's model incorporating both incomplete information and uncertainty.

One may also ask about the applicability of our model to different types of issues. For example, future research may examine what types of Sino-American issues are governed by ratification processes and which ones are characterized by implementation problems. One may be tempted to suggest that legal ratification processes characterize security issues, but China abides by the 1987 Missile Technology Control Regime even though it is not a signatory to it and has not ratified it. On the other hand, China signed the Non-Proliferation Treaty in 1992, yet there is ample evidence that it provided Pakistan with materials that helped Pakistan develop its nuclear program. Understanding such variation remains a formidable task.

A final outstanding question goes to the heart of Chinese domestic politics. What if Beijing can invest resources in gaining better control over the provinces and thus obtain higher rates of implementation? If Beijing likes the partially implemented outcome, such investments may not be rational. However, Beijing's preferences over IPR may change more rapidly than the preferences of some provinces, perhaps opening up enough divisions so that the center would be willing to pay some cost to obtain better implementation. In addition, better control of provinces

80. Rosendorff and Milner 2001.

also has some value in itself. In the framework here, it is likely that Beijing would make this investment under some conditions but not others.

In short, implementation is an important subject full of interesting strategic implications. Though often grouped together with formal ratification of agreements, we have shown that it differs in both theory and practice from them.

Appendix: A Formal Model of Implementation

Three actors $i \in \{U, B, P\}$ each have an ideal point x_i in R^n . The status quo Q is at x_Q . Any actor i 's acceptance set a_i consists of those points $a_i = \{x: d(x_i, x) \leq d(x_Q, x_i)\}$, where $d(\dots)$ is the simple distance between two points. The utility for i of point x equals $-d(x, x_i)$.

Define AQ as the line x_Ax_Q and aq as the line segment x_Ax_Q . Define $P^* = \{x: d(P^*, P) = \min(d(x, P)), x \in AQ\}$, that is, as the projection of P onto AQ , which may or may not lie in aq . The game consists of two stages. In Stage I, U and B choose an agreement A at x_A ; if they do not agree, x_Q remains. In Stage II, P chooses an implemented outcome $M \in aq$. Note that P may choose $x_M = x_A$ ("full implementation") or $x_M = x_Q$ ("nonimplementation"); all other points on aq are "partial implementation." If $M = Q$, then U and B will not choose $A \neq Q$.

Lemma 1: U and B may choose an $A \notin w_{UB} = bu \cap a_U \cap a_B$.

Proof by construction. Figure 4 shows such an A and M , which both U and B prefer to Q . U and B cannot both be better off by choosing A^* on their contract curve. A^* would be implemented to M^* at P , which B prefers to M but U does not, so A is Pareto-efficient and therefore an equilibrium.

H1: Adding an implementation constraint can expand the set of possible agreements before implementation. Proof follows from Lemma 1, since A would not be acceptable to B if it were fully implemented.

Lemma 2. Neither U nor B will reject a partially implemented agreement.

Proof. If $d(x_A, x_U) \leq d(x_Q, x_U)$, then $d(x_M, x_U) \leq d(x_Q, x_U) \forall x_M \in aq$ because preferences are convex.

Lemma 3. P 's preferences over points in AQ are symmetric around P^* , and its imputed utility, defined as $d(x_P^*, x)$, is a monotonic transformation of $-d(x_P, x)$ for all $x \in AQ$.

Proof. The line segment $x_Px_P^*$ is perpendicular to AQ , so for any x on AQ at distance y from P^* on AQ , there is another point x^* on AQ , also at distance y from P^* , such that $d(x_P, x) = d(x_P, x^*)$, because the right triangles $x_Px_P^*x$ and $x_Px_P^*x^*$ are symmetric.

Lemma 4. If $P^* \notin aq$ (or $P^* = Q$) and if $d(x_P, x_Q) < d(x_P, x_A)$, then $M = Q$, while if $d(x_P, x_Q) > d(x_P, x_A)$, then $M = A$; else, if $P^* = A$, $M = A$; else, if $P^* \in aq$, $M = P^*$.

Proof. These solutions minimize $d(x_P^*, x_M)$ and thus $d(x_P^*, x_M)$ in aq .

H2: Either full or partial implementation may be an outcome of the implementation game; by assumption, complete nonimplementation ($m = 0$) is not an outcome.

Proof. Proof of the first clause follows from numbers Lemmas 2 to 4; proof of the second by assumption if there are epsilon negotiation costs.

H3: Governments may negotiate agreements that the provinces would reject if they had ratification power.

Proof by construction. See Figures 4 and 6.

Lemma 5. When $M \neq Q$ and $M \neq A$, P prefers $x_M \in aq$ to both x_A and x_Q .

Proof follows from Lemma 3.

H4: The province P always weakly prefers the implemented point M to both the status quo Q and the agreement A .

Proof follows from Lemma 5.

Lemma 6. Neither, one, or both governments may prefer a partially implemented agreement to full implementation.

Proof by construction. See Figure 1 for neither, Figure 3 for one, and Figure 6 for both.

Lemma 7. If $M = P^ \neq A$, then there exists a point A^* on bu that both U and B prefer to M .*

Proof. If $M = P^*$, then M is off the contract curve bu , so there must be points on bu that both U and B prefer to M . One such point is the projection of M onto bu if that point lies in bu (as in Figures 4 and 7).

Lemma 8. Notwithstanding the previous lemma, when $M = P^$, there is no $A2$ such that (1) both U and B prefer $A2$ to M , and (2) such that $M = A2$; therefore, M is efficient for U and B and an equilibrium.*

Proof. Choose $A2 \in bu \cap c_U \cap c_B$ such that the line $A2Q$ is perpendicular to the line $A2P$ (that is, $A2 = P^*$); if there is no such $A2$ then the lemma holds. (Notice that $A2$ will be a fully implementable point.) When there is such an $A2$, then as A moves $A \rightarrow A2$, the corresponding M moves $M \rightarrow M^* = A2$. No such M will be preferred to A by both U and B because it is off the contract curve bu yet inside the two acceptance sets $c_U \cap c_B$. Yet it may easily be the case that either U or B prefers some M to $A2$, as by construction in

Figure 7. In such cases, there is an implicit contract curve, kinked at A2, consisting of some points on the line bu and other points $x \notin bu$: $x = M$ for some A. (NB: The “kink” will be a chord of the circle with diameter pq , with points described as by inscribing right triangles in the half-circle.)

Lemma 9. *U and B negotiate over an implicit contract curve that may differ from the nonimplementation contract curve $bu \cap c_U \cap c_B$.*

Proof. Proof follows directly from the preceding lemmas.

H5: In equilibrium, each partially implemented outcome M is Pareto-efficient so that the two states can find no fully implementable agreement that both prefer to M, nor another partially implemented M that both prefer to M; as a result, U and B negotiate over an implicit contract curve that may differ from the nonimplementation contract curve.

Proof. Proof follows directly from Lemmas 7 to 9.

H6: Partial implementation does not elicit retaliation or punishment.

Proof. Proof follows from the above lemmas and from the fact that U and B prefer M to Q in equilibrium.

H7: The implementation game may lead to a series of agreements over time when played myopically.

Proof by construction. See Figure 8.

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