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On 17 October 1958, Irish Foreign Minister Frank Aiken proposed a resolution at the United Nations (UN) that called on that body to explore ways to prevent the “further dissemination of nuclear weapons.” After Aiken’s initial effort did not succeed, Ireland reintroduced variations of the resolution every year until the UN General Assembly, on 4 December 1961, unanimously approved a version that created a process to negotiate a treaty to restrict the spread of nuclear weapons. The resulting Treaty on the Non-Proliferation of Nuclear Weapons, or Non-Proliferation Treaty (NPT) for short, opened for signature in 1968 and entered into force in 1970.1

At the time of the Irish resolutions and the NPT negotiations, many governments and academic experts forecast that nuclear weapons would spread widely. At a March 1963 press conference, US President John F. Kennedy famously predicted a world of 15 to 25 countries with nuclear weapons by the end of the 1970s.2 This projection never came true. Today, more than 60 years after Kennedy’s prediction, only nine states possess nuclear weapons. And the NPT, which has now passed its 50th anniversary, has 191 states parties, more than any other arms control treaty.3 Five states that had already developed nuclear weapons (the United States, Russia, Britain, France, and China) were allowed to join the NPT as nuclear weapon states; all other members had to join as non-nuclear weapon states, meaning they legally foreswore the option of getting the bomb when they signed the treaty. Only five states are not members: India, Israel, North Korea, Pakistan, and South Sudan. The first four have nuclear arsenals but cannot legally be recognized under the NPT as nuclear weapon states, so they remain outside the treaty (North Korea was a signatory but withdrew a few years before it conducted its first nuclear test); South Sudan became independent relatively recently and its non-membership is not regarded as a signal of potential interest in a nuclear program.

Many diplomats and scholars who focus on nonproliferation regard the NPT as a great achievement. I once heard Harald Müller, the senior German academic expert on nonproliferation, refer to the NPT as “a miracle.”4 If the NPT had never been negotiated or were to collapse, it would be impossible to negotiate an equivalent treaty today. US-Russian tensions and long-standing dissatisfaction among non-nuclear weapons states at the lingering inequality between nuclear haves and have-nots would preclude any chance to negotiate a new nonproliferation agreement.

Surprisingly, however, outside of the small community of nonproliferation experts who laud the treaty, the NPT is not given such credit. Realist thinkers in International Relations (IR) discount the impact of international institutions in general,5 and they suspect that states sign the NPT only after they have already

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2 Good historical summaries of the path to the NPT, including the Irish resolutions, can be found in George Bunn, Arms Control by Committee: Managing Negotiations with the Russians (Stanford: Stanford University Press, 1992); Henry D. Sokolski, Best of Intentions: America’s Campaign against Strategic Weapons Proliferation (Westport, CT: Praeger, 2001).
5 I heard Müller say this at an academic meeting, but no longer recall the exact date or location.
decided not to acquire nuclear weapons. Many policymakers are aware of countries that have cheated on their NPT commitments and fear the treaty is too hard to enforce; their focus on the small number of problem cases sometimes leads them to dismiss the treaty as a whole. Even many scholars who study nuclear proliferation do not find the NPT to be an important factor in proliferation dynamics. For example, influential books by Jacques Hymans and Etel Solingen on the reasons why some states pursue nuclear weapons and others do not both assess the NPT as having little impact on such decisions. Some of the initial quantitative analyses of the causes of nuclear proliferation included the NPT as a control variable and found that its impact was not statistically significant, leading them to conclude that “enthusiasm for the NPT among proliferation opponents…appears to be misplaced.”

This creates a disconnect. Real-world evidence suggests an effective treaty, but many people who are interested in nuclear proliferation either largely ignore the NPT or argue that it has little effect. In the face of this disconnect, a small number of studies has sought to reconsider the empirical evidence. Matthew Fuhrmann and Yonatan Lupu, for example, undertook a statistical analysis that concluded the NPT did make a difference, but they did not attempt to test any specific theoretical explanation for why this might be true. Jeffrey Kaplow’s Signing Away the Bomb takes the analysis further. It is the first book-length study to systematically examine the effects of the NPT and, to a lesser extent, of the broader nuclear nonproliferation regime.

Kaplow puts aggregate state behavior at the heart of his analysis. The more states that join and subsequently comply with nonproliferation institutions, he argues, the more confidence other states have that they can also join and comply without jeopardizing their security. Positive momentum toward near-universal membership allows the regime to be highly successful, but defections or signs of weakening commitment could also undermine confidence, putting the NPT on the road to unraveling. For these reasons, Kaplow concludes, “It is possible, then, for the regime to be both remarkably successful and fragile.”

Because Signing Away the Bomb is the first book to systematically assess the effectiveness of the nuclear nonproliferation regime, and because it advances a novel argument about the sources of success, all three reviewers in this forum agree that it is an important addition to the literature. Naomi Egel calls it “a significant contribution,” while Jeffrey Lantis observes that the book “adds complexity to our understanding” of state cooperation to limit the spread of nuclear weapons. Luis Rodriguez similarly writes that he finds the book “convincing and innovative.”

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The three reviewers also agree about much of what *Signing Away the Bomb* adds to the literature. They note that the attention to what Egel describes as “aggregate regime-level factors” is an important shift of focus away from individual state decisions and behavior. Much of the existing research on proliferation seeks to explain why individual states decide to pursue or renounce a nuclear weapons option, or else they give emphasis to the role of the United States, as the leading global power, in promoting nonproliferation.12 By highlighting how states perceive the performance of the nonproliferation regime as a whole, Kaplow adds a new dimension to our understanding of how states think about the nuclear option.

The reviewers also praise how the book examines multiple aspects of the regime—not just membership, but also compliance, enforcement, and the regime’s relation to nuclear latency (i.e. the acquisition of capabilities that would enable a state to develop a nuclear weapon should it make a decision to do so). Egel and Rodriguez also express appreciation for how *Signing Away the Bomb* takes account of changes over time. Rather than advance a static model of the drivers of proliferation, Kaplow develops a model that can explain how the regime varies in effectiveness as a function of collective state behavior.

In order to conduct statistical tests of his hypotheses, Kaplow constructs new ways to measure relevant variables. The three reviewers all single out Kaplow’s new measurement of what he calls “regime embeddedness” (166-173) as particularly likely to be of value in future research. In developing this measurement, Kaplow also calls attention to the fact that the NPT is part of a larger “regime complex” that contains many other institutions.13 More broadly, Kaplow seeks to link some of his analysis of the nonproliferation regime to broader themes in the literature on international organizations. All the reviewers see this cross-disciplinary aspect of *Signing Away the Bomb* as another positive feature of the book. As Rodriguez puts it, Kaplow “creates the possibility to bridge scholarly communities” that typically “do not interact” with each other.

Despite their considerable praise for the book, all three reviewers also have critiques. In particular, each one finds it to be undertheorized. Lantis writes that “readers who are looking for more theoretical innovation…will not find them here.” He laments that Kaplow did not do more to connect the analysis to larger debates between the major paradigms in IR. Both Lantis and Egel suggest that *Signing Away the Bomb* should also have engaged more fully with the extensive literature on norms in IR, especially considering existing work on what some describe as a nonproliferation norm.14 Rodriguez shares the concern that the book’s analysis is not sufficiently theorized. Given that perceptions of regime effectiveness do a lot of work in the book, Rodriguez says that the concept of perceptions should be more fully elucidated.

Egel and Rodriguez also point out that Kaplow’s analysis treats all states as if they are the same. To Rodriguez, many of the tests in *Signing Away the Bomb* are based on an implicit assumption that all countries would want nuclear weapons. But historically the majority of states have not been interested in acquiring the bomb. Rodriguez wishes that the book had done more to move away from assuming “a uniform, universal desire to get nuclear weapons” in order to focus on the key countries that were realistic proliferation risks.

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Egel argues similarly that “states are not equal” in their impact on other states’ nonproliferation decisions. If states base decisions to join the NPT on expectations that the treaty will effectively constrain other states, they are not going to care equally about all other states. Instead, their decisions are likely driven by the commitments being made by a key regional rival or a handful of important competitors.

Lantis also singles out what he calls a “narrowness of focus.” Although Signing Away the Bomb discusses the broader nonproliferation regime complex, in practice its empirical tests focus on just the NPT. Other elements of the regime are not assessed in comparable detail. Lantis also criticizes the lack of attention to the disarmament side of the equation. Article VI of the NPT calls for good-faith efforts to eventually achieve nuclear disarmament. In the last decade, widespread dissatisfaction with the slow pace of progress on Article VI prompted many non-nuclear weapon states to negotiate a Treaty on the Prohibition of Nuclear Weapons (TPNW). Lantis paints the lack of attention to recent developments such as adoption of the TPNW in 2017 as “a missed opportunity” to broaden the analysis of the NPT’s legacy.

In his reply, Jeffrey Kaplow acknowledges that the critiques offered by the reviewers point to potentially valuable areas for further research. Not surprisingly, however, he also defends the book’s analysis. Against the charge that Signing Away the Bomb is undertheorized, Kaplow replies that he sought to develop a middle-range theory rather than engage the major interparadigm debates in IR. He argues that his focus on aggregate behavior in the regime offers a novel theoretical approach for explaining the level of success achieved by nonproliferation institutions.

Kaplow also rejects the norms-based analysis highlighted by Egel and Lantis. He contends that his more rationalist approach better fits the evidence. If states internalize nonproliferation norms, then the regime would display “a kind of stickiness” in which most states continue to comply even after evidence of noncompliance by others. His model, in contrast, predicts that states will start to pull away as soon as they see evidence of a weakening regime, meaning his theory better accounts for the regime’s fragility.

Kaplow responds in several ways to the point that states differ in their impact. He notes that a diffuse version of reciprocity is important. Even if states care most about a particular rival, they will want to see evidence that NPT members in general are willing to enforce the treaty against violators, because this will increase their confidence that the rival state they care about most will find itself constrained by the treaty. Kaplow adds that some of the evidence presented in the book also helps deal with the problem of treating all states as if they are the same. This includes statistical tests run on subsets of states as well as evidence about the decision-making of individual states that is presented in mini case studies in the book. Kaplow further suggests that most states are not at the extremes of being either clearly committed to pursuing nuclear weapons or clearly disinterested. He argues that his analysis works reasonably well for states in the middle that could go either way. Kaplow ends by proposing that the book’s mode of analysis could be extended to other international security institutions, making the approach applicable beyond the nuclear nonproliferation regime.

The critiques offered by the three reviewers should not obscure an essential area of agreement. All three reviewers find Kaplow’s main conclusions convincing (as do I). Signing Away the Bomb presents the most systematic evidence yet that the NPT has made a positive contribution to the original Irish resolution’s goal to slow the “further dissemination of nuclear weapons.”

Contributors:
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Review by Naomi Egel, University of Georgia

Signing Away the Bomb is a significant contribution to scholarship on nuclear nonproliferation and nuclear decisionmaking more broadly. Introducing a new dataset of state embeddedness in the nonproliferation regime and employing a range of statistical analyses, it explains how the Nuclear Non-Proliferation Treaty (NPT) and the nonproliferation regime constrain state behavior in a variety of ways.

The book’s focus on the nonproliferation regime’s performance, which it captures through chapters on membership, compliance, enforcement, and latency, rather than focusing solely on institutional design, expands scholarly understandings of the NPT and the nonproliferation regime’s role in shaping states’ decisions related to nuclear weapons. The book’s core argument is that despite constant concerns over the NPT’s credibility and its future, the treaty and the nonproliferation regime more broadly have largely succeeded in preventing nuclear proliferation and in governing nuclear issues in the sense of widespread adherence, acceptance of intrusive verification procedures, and punishment of violations. The basis for the nonproliferation regime’s success is that a country’s participation in the regime (i.e., their embeddedness) communicates its preferences to others. In the aggregate, such information helps states resolve uncertainty about the NPT and the nonproliferation regime’s efficacy. This then enables states to make decisions based on the behavior of others and respond effectively to nonproliferation challenges. Through demonstrating the role of aggregate regime-level factors (rather than domestic-level state factors) in countries’ decisions related to the NPT and the nonproliferation regime, this book highlights the importance of international commitments in shaping state behavior.

In addition, the book’s rich statistical analyses of key aspects of nonproliferation (membership, compliance enforcement, and latency) provide a valuable addition to existing qualitative work on the NPT and the nonproliferation regime by assessing patterns across state behavior in these areas.1 The new measures of regime embeddedness developed in this book will also be useful to scholars who examine other aspects of nuclear (non)proliferation, and is an important contribution to existing quantitative scholarship on the factors that shape nuclear weapons development and pursuit (including research on nuclear latency).2 The book’s quantitative analyses also help contextualize proliferation concerns regarding specific countries (for example, how similar Iranian nuclear latency is to other cases of nuclear latent states).

Chapters 1 and 2 make the important point that the NPT is distinct from multilateral treaties in other issue areas, including in some ways that would seem to predict success. In addition, Kaplow engages with

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alternative explanations throughout, which both contextualizes and strengthens this book’s findings. Chapters 3 and 4 pair qualitative case studies with quantitative analysis of states’ decisions overall, providing rich empirical evidence of the dynamism in states’ engagement with the NPT. These chapters show that states’ decisions regarding aspects of the NPT are not static but change in response to (perceived) changes in the NPT’s performance. Chapter 3 also reveals how the small set of states that are likely to join the NPT with the intention to cheat view the NPT’s performance: a strong treaty makes such states less likely to join.

States make several decisions regarding the NPT. Although other scholars have focused on the creation of the treaty and states’ initial decisions to join, the NPT and the nonproliferation regime are dynamic. As Kaplow notes, a focus on understanding initial decisions (creation and joining) overlooks much of how the regime and the treaty operate in practice. In particular, chapters 5 and 6, on enforcement and latency respectively, provide useful insights regarding when states choose to punish nuclear weapon pursuers and when states develop enrichment capabilities. By going beyond the NPT and focusing on states’ embeddedness in the nuclear nonproliferation regime more broadly, this book demonstrates the importance of the regime (and not just the NPT alone) in shaping states’ nuclear decisionmaking. The broader nonproliferation regime is crucial to explaining both why states are more concerned with some possible violations than others (chapter 5) and how states which possess or are considering development latent nuclear capabilities (i.e., nuclear enrichment and reprocessing programs) engage with the regime (chapter 6). Kaplow shows that states are less likely to punish violations by those who are more deeply embedded in the nonproliferation regime, and more likely to punish violations by those who are less embedded in the regime. Regarding latency, the book finds that greater embeddedness in the nonproliferation regime is associated with the development of latent nuclear capabilities: the regime facilitates, rather than inhibits, nuclear latency.

Yet, particularly with regard to chapters 3 and 4, there remain several unanswered questions about relationships among states in ways that matter for the NPT and the nonproliferation regime. Chapters 3 and 4 emphasize that states make decisions regarding the NPT based on expectations of reciprocity from other states: the more states that join and comply with the NPT, the more each individual state will (on average) view the treaty as strong and thus join and comply with the NPT. However, states are not equal in the international system. The question of reciprocity from which states deserves further scrutiny: most states have never pursued nuclear weapons, lack the capabilities and/or intent to do so, and thus forgo essentially nothing by renouncing the pursuit of something they never intended to pursue. For example, Mexico is unlikely to be concerned about reciprocity from Austria, Ireland, and Costa Rica, but more concerned about reciprocity from nuclear aspirants and nuclear weapon states. Likewise, there is no evidence that Pacific Island states are concerned about each other developing nuclear weapons. In contrast, evidence in chapter 3 regarding Switzerland’s decision to join the NPT highlights the importance of reciprocity from states that likely to possess nuclear weapons for the Swiss decision.

More broadly, most states that ratified the NPT and then complied with it did so without seriously contemplating the pursuit of their own nuclear weapons. Although the book convincingly establishes that states debating the pursuit of nuclear weapons assess the NPT’s effectiveness in their decision to both join and comply, it is less clear that most states would refuse to join or would cheat if the treaty’s effectiveness were weak. Concerns about the treaty’s effectiveness are as old as the treaty itself, but most states still have never pursued nuclear weapons. To be sure, there are good arguments for focusing on the decisionmaking calculus of states with enrichment and reprocessing capabilities, i.e., the ones with the greatest capabilities to produce

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nuclear weapons. Yet arguments about the role of reciprocity in decisions about membership and compliance (decisions all states that have joined the NPT have made) should be clear regarding which states’ reciprocity is important.

A related issue is that of reciprocity from established nuclear weapon states (as compared to other nonnuclear weapon states). It emerges briefly in the case studies of chapter 3 (70-71), but analyses of what kind of reciprocal commitments matter for states’ decisions to join and comply with the NPT could be further developed. Rebecca Davis Gibbons, for example, finds that US leadership was critical in getting nonnuclear weapon states to join the NPT but that the US exerted pressure on states in different ways, depending on the state in question.4 Although Kaplow includes measures of US affinity and US power in the book’s statistical analyses of NPT membership, these may not capture the varied ways in which US leadership is applied to promote adherence to the NPT.

Second, the question of normative expectations in driving state behavior is briefly addressed but could have been developed further, especially in explaining the behavior of most states. Kaplow notes that normative expectations “are more compelling in their explanations for regime successes than they are for regime failures” (16). But successes, i.e., most states’ compliance, are not trivial. Moreover, this suggests that the factors driving compliance decisions vary for different categories of states. Likewise, chapter 6 considers the constraining effect of nonproliferation norms as a possible explanation for the pursuit or non-pursuit of latency. Kaplow does not find in this chapter that the nonproliferation regime delegitimizes the possession of advanced nuclear technologies or that normative restraints limited the development of latent nuclear capabilities by states that sought them. Still, given that most states have not pursued nuclear latency, the question of whether normative expectations restrained most states’ behavior is unaddressed. While the focus on states with such latent capabilities is sensible for examining drivers of nuclear capabilities pursuits, it is important to recognize that this category does not represent most states in the world and that the factors driving nuclear latent states’ behavior are not necessarily the factors driving most states behavior.

One of the book’s strengths is how it explicitly addresses changes over time in the NPT and the nonproliferation regime more broadly. Chapter 3 demonstrates that the main drivers of NPT membership change over time, although overall membership and enforcement are particularly strong predictors of states’ decisions to join across the time period in question. However, the different clusters of early versus later joiners might also suggest differences in the key theoretical variable of “perception of effectiveness.” In chapter 4 Kaplow similarly argues that “it is likely that overall membership in the NPT has diminished in importance over this time as a signal of regime effectiveness, merely because nearly all states are now members” (135). This raises the question of what perception of effectiveness means at different points in time. It is possible that for early joiners, this refers to anticipated enforcement whereas for late joiners, it is their interpretation of the existing track record of effectiveness. That is, differences over time may involve not only which variables matter for perceived effectiveness, which is important in itself, but, furthermore, that the substantive content of these variables may also shift over time. This is an important distinction; understanding such shifts over time would be a valuable area for additional research.

Finally, the book highlights how that the NPT and the nonproliferation regime should not be taken as synonymous, and future research might further investigate the extent to which they differ. Kaplow argues that “lessons from NPT membership are likely to be applicable to other nonproliferation and arms control treaties and to international security institutions more widely” (51). Building on this scholarship and expanding the analysis of drivers of membership and compliance with the NPT to other agreements governing nuclear (and nonnuclear) weapons would be useful to assess the extent to which the NPT is representative of arms control


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and nonproliferation agreements and institutions more broadly, as well as ways in which the NPT shapes states' engagement with other aspects of the nonproliferation regime.

As *Signing Away the Bomb* convincingly argues, questions of the NPT and the nonproliferation regime's overall health—both past and future—are central to understanding both proliferation and regime dynamics in international security. This book is highly valuable in its explanations of these issues, marshals an impressive array of evidence, and provides a strong foundation for future research.
In 2020, the international community celebrated the 50th anniversary of the entry into force of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Jeffrey M. Kaplow’s book recognizes this tremendous accomplishment in state cooperation and compliance, and also reminds us that there is much about the nuclear nonproliferation regime that we take for granted. Key research questions for this study include: How could nearly every country in the world sign on to one of the most intrusive and demanding international agreements of all time? How could rational governments not only comply with the treaty, but also support dozens of related agreements across different issue areas that effectively constrain their behavior?

This timely and well-written book employs advanced statistical analyses of data on regime membership and cooperation to explore this puzzle. It asserts that countries look to the behavior of others within the regime to shape their own decisions and resolve uncertainty about its effectiveness. This study of the patterns of membership and compliance adds complexity to our understanding about state preferences and cooperation in the international system.

The strongest contributions of Signing Away the Bomb can be found in empirical testing of state relationships and decisions within the NPT. The book employs a diverse array of empirical evidence. Kaplow’s primary focus is on the nonproliferation mechanisms within the NPT regime, drawing connections across it in relation to the agreements and restrictions and enforcement and compliance. The variables examined in this book include regime-level membership, verification, compliance, enforcement, and embeddedness. By analyzing data on when states choose to join, the specific mechanisms by which the regime might constrain behavior, and conditions for punishment of violations, Kaplow demonstrates the cumulative effect of regime cooperation. His quantitative approach captures the collective probabilistic effects of cooperation with the regime, and most of its findings will be reassuring to supporters of the NPT.

This study shows, for example, how state participation in the NPT can be driven by state government perceptions of its effectiveness and assurances of positive outcomes from such commitments. The negotiation of the treaty in the 1960s created a certain momentum—a diplomatic “energy” that fueled interest in participation. The grand bargain of the NPT, that state signatories to an agreement to forego the development of weapons of mass destruction could be part of a wider community of nations and receive peaceful nuclear energy technology assistance, appears to have worked. Kaplow systematically studies correlations between membership patterns and compliance, verification, and enforcement of the regime.

One especially interesting result of this study is nuclear latency. The author employs data to examine what many have long suspected: that the “grand bargain” that the NPT actually offers between simultaneously attempting to limit state access to nuclear technology and facilitating the same access has real-world consequences. Kaplow’s study reveals a strong positive association between embeddedness in the nuclear nonproliferation regime and nuclear latency. That is, members of the NPT are actually more statistically likely to develop latent nuclear capabilities such as uranium enrichment and even reprocessing (ENR) technologies. Membership, it seems, has its privileges.1

In terms of its style and tone of investigation, this study is especially reminiscent of other works on membership and incentives for participation in the nuclear nonproliferation regime. For example, Andrew Coe and Jane Vaynman argue that membership in the NPT has been shaped by state perceptions of the

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consequences of proliferation coupled with good old fashioned superpower collusion. Their work synthesizes perspectives on the grand bargain of the arrangement versus other theories such as cartel theory. Similarly, Matthew Kroenig argues that state attitudes towards proliferation may be shaped by relative asymmetries of power. 

While the empirics of this study are impressive, readers who are looking for more theoretical innovations like those above or others that are carefully embedded within the broader scholarship will not find them here. However, this is not the primary focus of the study. Instead, following a brief introduction to prominent theory lenses—from regime theory, international norms, the effects of the Cold War and power politics, and domestic politics—the book seeks to distance itself in an effort to outline a new approach. But experts may find this unsatisfying as the study seems clearer about what it is trying to move away “from” than where it is moving “to” theoretically.

This theoretical drift is potentially problematic since the foundational literature in this area is well established, respected, and linked to broader frames in the study of international relations such as levels of analysis. The book ignores levels-of-analysis framing and perspectives that can be found in classics like Scott Sagan’s “Three Models in Search of a Bomb.” It mostly sidelines the powerful explanatory factors in domestic politics models of nuclear proliferation, such as in the outstanding work of Jacques Hymans, Etel Solingen, and others. Meanwhile, correlations between data on membership patterns and compliance tell us only half the story. To the book’s credit, it does occasionally intersperse mini-case studies of government decision-making (such as Japan and the track record mechanism in the nonproliferation regime), but these illustrations sometimes leave the reader wanting for more.

In lieu of meta-theorizing, the book admirably fills in and explores many contours of treaty membership and compliance. It nicely explains the mechanics and empirical foundations of the NPT, but falls back on what one might call a kind of theoretical fear-of-missing-out as a driver of allegiance to nonproliferation regime. This social pressure is real, of course, but how theoretical this argument is remains open to interpretation. Kaplow missed an opportunity throughout the latter half of the book to bring the theoretical work full-circle and speak to the prevailing scholarship.

There is potential for this study to have broader impact, and many different ways that these data may be applied. For example, a study of aggregate behavior of member states could certainly develop insights related to theories of regime complexes or international norms. Alter and Raustiala tell us that regime complexes are arrays of partially overlapping and nonhierarchical institutions that include more than one international

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agreement or authority. 7 Functional institutions and agreements are interconnected, as is the institutionalization and legalization of the nuclear nonproliferation regime. Given the book’s more discrete focus on NPT membership-related attributes, it might miss some of the “complexity” in regime complexes.

Similarly, Kaplow introduces norm theory only in passing, but does not really examine the implications of his arguments for the literature on norm development, maintenance, or change. There are clear possible connections to studies like Maria Rublee, Manseok Lee and Michael Nacht, as well as implications to more recent works on norm resiliency such as Michal Smetana and Joseph O’Mahoney.8 The study also references the broader literature on international organizations, including how the results of this project challenge the conventional wisdom, yet this discussion is not fully drawn out or connected to works on legitimacy or rules structures.9 In sum, I believe that the theoretical potential of this study is ample, yet not fully realized.

Finally, readers may also be concerned with the book’s narrowness of focus. The book is true to its promise: it details and celebrates the accomplishment of a single treaty very well. But the modern nuclear nonproliferation regime is made up of scores of interconnected agreements, treaties, and practices. Indeed, one might argue that it is the archetypal “norm cluster,” to use a term from critical constructivist theory.10 The analysis of NPT violations among high-risk cases is interesting, for example, but also strongly linked to standards for verification, sovereignty, and compliance with many different international agreements. In addition, the book does not directly study or compare the disarmament norm that is embedded in the larger nonproliferation cluster (and Article VI of the NPT) to other standards of measurement.

The singular focus of the book also shows through in limited attention to contemporary developments, especially the significance of the 2021 Treaty on the Prohibition of Nuclear Weapons (TPNW) and contemporary international efforts to restrict the proliferation of ENR technologies. If one accepts that some of the pillars of the NPT lie at the core of a much broader cluster of norms and institutions, then the success of the treaty certainly has carry-over effects for other agreements and accomplishments. The author does acknowledge this dimension of embeddedness, but does not empirically examine these broader connections. This is a missed opportunity in that a thorough and detailed look “back” at the success of the NPT naturally inclines one to also think ahead about its legacy and implications for cooperation across multiple issue areas.

In conclusion, Signing Away the Bomb is a well-written and interesting study that demonstrates how and why the NPT has been so successful. To its credit, it also invites readers to consider many additional theoretical and empirical questions.

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) opened for signatures in 1968 and entered into force in 1970. It has become the cornerstone of a set of norms, laws, and organizations that are intended to prevent the spread of nuclear weapons while guaranteeing access to peaceful applications of nuclear technology. Over the years, scholars and analysts of the nonproliferation regime have criticized the weaknesses of the NPT and predicted the failure of the nonproliferation governance architecture. Despite these bad omens, the nonproliferation regime has near-universal membership and high levels of compliance.

In *Signing Away the Bomb*, Jeffrey M. Kaplow sets out to explain the surprising success of the regime, especially since it “has weathered fifty years of challenges but seems still on the verge of failure” (48). To address this puzzle, Kaplow moves beyond what the regime does to study how the international community perceives the regime. Kaplow’s central argument is that perceptions of the regime’s strength and the information it conveys about its members matter in nuclear decisionmaking. The book is convincing and innovative, Kaplow’s theoretical and methodological approaches are creative and will set a precedent on how to study the regime’s effectiveness, and the breadth and depth of his analysis are commendable.

I will start this review by summarizing the main argument in *Signing Away the Bomb*. Then I will focus on two elements I particularly like in the book: Kaplow successfully shows that design is not destiny by studying the components of the regime independently and that time matters when reviewing the regime’s development. I will finish by pointing out two aspects that could improve this research: an assumption of universal desire for nuclear weapons permeates the book that could be better justified, and the concept and operationalization of perception need more theorization.

For Kaplow, the idea of the nonproliferation regime matters. He posits that the primary determinant of the nonproliferation regime’s success is “how the regime is seen by the international community—would-be members, staunch adherents, and weapons aspirants alike” (17). The main idea in *Signing Away the Bomb* could have been circular: the regime is effective because states perceive it as effective, making it effective. Kaplow avoids this pitfall by separating the main argument into two components: countries’ embracing of the regime reveals their preferences, and their behavior within it resolves uncertainty about its effectiveness. This separation allows Kaplow to posit that assurances that others are abiding by their nonproliferation commitments make states likely to comply themselves. Thus, collective restraint emerging from perceived effectiveness explains the success of the nonproliferation regime more than state-level factors or the actions of the United States as the hegemon.

One of the aspects that impressed me the most in *Signing Away the Bomb* is Kaplow’s theoretical approach to studying regime effectiveness. Instead of focusing on design features, treaty language, or the behavior of some states, especially the United States as an enforcer, as much of the literature does when looking at regimes,² he pays attention to the aggregate behavior of the population of states. Moving the field away from seeing regime design as regime destiny, Kaplow theorizes that “[a]t least some of the constraining power of the regime may be more an emergent property of the decisions of its members than due to any design characteristic” (19). Moreover, his decision to analyze the aggregate behavior of member states brings a

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relational component into the study of regime effectiveness. *Signing Away the Bomb* thus creates the possibility to bridge scholarly communities that sometimes do not interact when studying the nonproliferation regime.

Kaplow further questions the assumption that design is destiny by separating the nonproliferation regime into four aspects: membership, compliance, enforcement, and latency. He analyzes each component in separate chapters, giving him the space to delve into the specific dynamics driving these elements of the regime and providing illustrations to help the reader better understand these subtleties. Kaplow does not ignore the forest by focusing on the trees—quite the contrary. He makes sure to connect the specific sub-argument of each chapter with the driving idea in the book. Moreover, instead of studying the NPT in isolation, a common approach in the field,³ he analyzes this crucial treaty as part of a broader nonproliferation regime complex that can address some of the NPT’s weaknesses and design problems.

Another admirable aspect of *Signing Away the Bomb* is Kaplow’s attention to time. Some studies of the nonproliferation regime tend to focus on specific moments in the lifetime of the global nuclear order, e.g., during the negotiations drafting the NPT or during specific crises challenging the existence of the nonproliferation regime.⁴ Other authors present a more comprehensive picture by weaving together snapshots of the development of the nonproliferation regime or focusing on the historical engagement of one country with the regime.⁵ In contrast to these two approaches, Kaplow aggregates states’ behavior, separates the regime into four aspects, and comprehensively traces their development throughout time.

Kaplow’s approach helps him capture how membership, compliance, enforcement, and latency have changed, the rates at which they did so, and the factors that drove the modifications. This approach allows him to parse out the factors influencing each component more explicitly. In chapter 4, for example, Kaplow provides analysts with valuable tools to capture variations in compliance over time and understand the risk of cycles of reciprocal noncompliance. His decision to study the NPT’s aspects separately as well as the aggregate behavior of states also allows him to challenge prevailing explanations about the persistence of the nonproliferation regime that focus on pressures from great powers or state capabilities.⁶ By analyzing the behavior of the entire population of member states throughout time in each regime component, Kaplow is able to capture better what he calls “collective constraint” (102) as a critical component behind state compliance.

I could keep writing about elements in *Signing Away the Bomb* that I like. For example, Kaplow’s attention to regime complexes instead of just one treaty or organization will influence how analysts evaluate the effectiveness of regimes. His multi-method approach will set a precedent for how to parse the different components driving states’ engagement with the nonproliferation regime. The nonproliferation score he introduces will be an extremely valuable tool for scholars and policymakers who try to understand latent nonproliferation policy preferences. Instead of continuing to write on what impressed me in the book, I will now turn to two aspects that it could have better addressed.

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⁵ For example, Jayita Sarkar, *Ploughshares and Swords: India’s Nuclear Program in the Global Cold War* (Ithaca: Cornell University Press, 2022).

First, there seems to be an underlying assumption in *Signing Away the Bomb* that all countries might want to acquire nuclear weapons eventually, without an explanation of when nuclear aspirations emerge. Thus, according to Kaplow, we can assess the success of the nonproliferation regime by paying attention to how many countries do not actually acquire or develop nuclear arsenals. Kaplow is explicit about this assumption of universal desire. In the introduction, he posits that the “theories presented [in the book] rely on a form of reciprocity in which a country is willing to put aside nuclear aspirations as long as it has confidence that others will also give up nuclear pursuit” (7). Moreover, his treatment of latency as an aspect of the nonproliferation regime resembles Ronald Popp’s argument that the NPT codified an inalienable right to latency.7

Kaplow engages with the counterargument that the NPT screens rather than constrains proliferation desires (12). This counterargument, though, also assumes that every state wants to acquire nuclear weapons, some stop desiring them, and that they then join the nonproliferation regime. In other words, the initial assumption is universal desire. This assumption disregards the possibility that countries might not want to acquire nuclear weapons in the first place, a possibility that Kaplow briefly acknowledges on page 141. However, Kaplow does not justify why the assumption of universal desire is valid. A justification is necessary given the work of several scholars that shows that we cannot assume, *a priori*, that there is a uniform, universal desire to get nuclear weapons.8 Policymakers have also questioned this assumption in practice. The Treaty on the Prohibition of Nuclear Weapons illustrates that for much of international society, nuclear arsenals do not count as a necessary tool to provide for their security.9

Kaplow acknowledges that nuclear arsenals might only represent a fundamental security tool for some states. He writes that the nonproliferation regime “demands that member states forgo a powerful and desirable military capability that, for some states at least, could be the difference between maintaining national security and facing an existential threat” (emphasis added, 24-25). Maybe we can assess the regime’s effectiveness by analyzing how it reinforces that calculus of some states that nuclear arsenals are unnecessary to maintain national security—or even a risk for national security. The nonproliferation regime’s success, then, could also be measured by how much it reinforces the decision of some countries to not even consider nuclear weapons as a necessary tool to achieve security.

The second aspect that could have been better addressed in this book is what I perceive as an under-theorization of the concept of perception. Kaplow states that perceptions of the regime’s strength are a crucial component of the idea of the nonproliferation regime—his stated primary explanatory variable. However, I would like to have read a more comprehensive explanation of what perception is, whose perception we should focus on, and how perception changes throughout time. Moreover, if the focus is on perception, I wonder what the differences are between a country’s perception and the aggregate perceptions of all states. Similarly, Kaplow could offer a more explicit explanation of how perceptions about membership, compliance, enforcement, and latency aggregate to form a broader perception of the effectiveness of the nonproliferation regime in general.

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I would also like to see a better justification for how Kaplow’s methodological approach captures or operationalizes perception. Some scholars have used survey experiments and wargaming to analyze the politics of credibility and nuclear perceptions,\textsuperscript{10} two components that Kaplow addresses in this book. Moreover, the main argument in \textit{Signing Away the Bomb} might not even need to invoke the concept of perception to be convincing. In the conclusion, for example, Kaplow writes that uncertainty characterizes nuclear decisionmaking (205). He argues that countries address this uncertainty by looking to the aggregate behavior of others for clues about the nonproliferation regime’s effectiveness and patterns of membership to understand the risks of violation. If Kaplow had used this version of the main argument throughout the book, I would not have felt the need to raise my questions about the concept and operationalization of perception.

In \textit{Signing Away the Bomb}, Kaplow does an outstanding job at reconciling “the pessimism of scholars and policymakers with the regime’s record of success” (212). While I discuss above some aspects that could have been better addressed in this book, these criticisms do not point to weaknesses. Instead, I point to doors that Kaplow’s book is opening to start new scholarly and policy discussions that could improve our understanding of the effectiveness of the nonproliferation regime. This book will be a great addition to an undergraduate syllabus on nuclear politics, graduate syllabi on international organizations and research design, and the bookshelves of nuclear experts worldwide. In \textit{Signing Away the Bomb}, Kaplow offers an innovative and convincing argument about the effectiveness of the nonproliferation regime that will move conversations forward in International Relations and the community of nuclear analysts and policymakers.

Response by Jeffrey M. Kaplow, College of William & Mary

I am grateful that three exceptional scholars—Naomi Egel, Jeffrey Lantis, and J. Luis Rodriguez—have taken the time to write thoughtful reviews of my book. My thanks also go to Jeff Knopf for writing the introduction and Jennifer Erickson for organizing the roundtable.

I appreciate the fact that all three reviewers recognize the central contributions of the book in understanding the big-picture relationship between regime membership and nuclear decisionmaking, and in particular the ways in which collective state behavior today affects the nuclear decisionmaking of states tomorrow. The reviewers’ praise for the book validates the idea that international institutions should be central to the study of nuclear weapons proliferation. While this was once a neglected area of research,¹ I am pleased that my book joins a recent wave of nuclear scholarship that takes institutions seriously.²

The reviewers also all offer useful critiques of the book and suggestions for future research, and I turn to several of these below.

Egel calls for more clarity around the idea of reciprocity within the nonproliferation regime, correctly pointing out that states differ in which other nations they seek reciprocity from and in the form that reciprocity should take. In the book, I use the term “reciprocity” in a general way to capture the idea that countries care about how other nations interact with the regime. Reciprocity matters in international institutions when a county’s decision to join or comply depends in part on the decisions of others.³ Not all institutions have this feature—the decision to protect endangered species in one country, for example, may have little effect on the willingness of leaders to do so in another—but the nonproliferation regime has reciprocity at its core. Taking this idea to an extreme, few countries would want to be the only state in compliance with the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). If other states are cheating by secretly pursuing nuclear weapons, that fact might push countries that were on the fence into following suit and seeking nuclear weapons of their own. Rampant cheating also affects perceptions of treaty effectiveness; countries are more likely to trust an institution to safeguard their security if it is seen as a strong institution with few cheaters.

Both Egel and Rodriguez emphasize that not all countries have nuclear weapons ambitions, contrary to what Rodriguez calls “the assumption of universal desire.” We might think of proliferation risk as a kind of continuum running from no chance of weapons pursuit on one end, to the certainty of a nuclear weapons program at the other. In the book, I theorize that the nuclear nonproliferation regime diminishes in importance at the extremes. Costa Rica will not seek weapons no matter how weak the NPT appears, and one could at least argue that North Korea was set on nuclear pursuit no matter the strength of international


institutions. But for the countries in between—those with at least some nuclear curiosity and underlying capability—the strength of the nonproliferation regime may be an important factor in the state’s nuclear decisionmaking. And of course these are the countries that capture much of our nonproliferation policy attention.

While my theory takes this variation in nuclear risk into account, relaxing the assumption of universal desire does pose challenges for the quantitative analysis in the book. To address differing nuclear ambition among countries, I run statistical tests both for all member states and for several subsets of states we might think are at higher risk of proliferation based on the findings of the existing literature. This is by no means a perfect solution, however, and better capturing nuclear weapons interest is an important area for future empirical research.

Egel points out that variation in proliferation risk matters in another way. Countries that lack both the desire and capability to seek nuclear weapons probably do not loom large in the regime calculus of others. If one were evaluating the strength of the NPT, for example, one might not give the institution much credit for securing the compliance of Luxembourg or New Zealand. In the book, I try to measure perceptions of regime effectiveness in different ways to take account of the fact that Egypt or South Africa’s NPT membership might send a stronger signal about the regime than does Belgium’s. This connects to Rodríguez’s discussion of how to theorize about and operationalize perceptions of regime strength. National leaders seem to vary considerably in how they evaluate the regime. For some countries—including the cases of Switzerland and Australia described in the book—a key criterion for deciding on their own membership was whether specific other states joined the NPT. Other nations worried about the treaty’s duration, the presence of treaty loopholes, or the strength of international verification measures.

My strategy for addressing this variation in the book’s quantitative analysis was to try to capture as many different measures of regime strength as possible—from overall compliance, to membership, to verification and enforcement—with the understanding that I was surely missing some key aspects of what countries look for when they evaluate treaty success. Ultimately, I agree with Rodríguez that it would be better to have a theory of regime perception and apply a specific measure derived from that theory. His suggestions for

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developing more direct measures of the perception of regime strength, such as by using survey experiments, point the way to promising future research that can help us better understand how states assess international agreements in the midst of uncertainty.

Egel and Lantis both encourage more engagement with normative explanations for nuclear restraint. I understand their point; a significant body of research identifies international norms against nuclear proliferation as a key element of the regime’s success in encouraging nuclear restraint. But where norms-based theorists envision the instantiation of a norm against nuclear proliferation, I argue that countries confront a more rationalist cost-benefit calculus when deciding whether to join or comply with elements of the regime. This is not just a semantic distinction. Some normative scholars predict that norms will persuade states to change their underlying preferences, leading to a kind of stickiness to the nonproliferation norm encouraged by the regime. I argue in the book, however, that perceived weaknesses in the regime will have a direct effect on the nuclear behavior of its members, contrary to the expectations of some norms theorists that nuclear restraint will persist even if the regime fades away. The empirical tests in the book, however, cannot always distinguish between norms-based theories and these more rationalist cost-benefit calculations, and so the book’s analysis may also provide useful evidence for scholars who emphasize normative explanations for nuclear behavior.

Lantis, in his thoughtful critique, expresses concern both that the book fails to blaze new ground in international relations theory, and also that it is insufficiently rooted in existing theoretical frameworks. What Lantis sees as “theoretical drift,” however, I would argue is a discussion that advances new theories of how the nonproliferation regime works. The book offers novel theories of membership, compliance, and enforcement in international security institutions. I also introduce and adjudicate between two competing theories of technology development within the nonproliferation regime. All of this speaks to the politics of regime credibility, a factor that is not generally considered in existing work.

I see a few possible reasons for this disconnect. First, unlike most of the scholarship that Lantis cites favorably in his review, I do not offer a holistic theory of nuclear proliferation. Instead, the focus of the book is on how and why the nuclear nonproliferation regime works; that is, I offer theories of institutional effectiveness. This is not to say that the book is not relevant for scholars and policymakers who are interested in nuclear proliferation—to my mind, understanding the functioning of the nonproliferation regime is essential to addressing today’s nonproliferation challenges.

Second, Lantis is correct that the book does not propose a meta-theory of international institutions or nuclear proliferation, although I believe that it does offer theoretical contributions nonetheless. The theories presented in the book fall squarely in the realm of “mid-level theory,” avoiding the grand paradigmatic

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debates in international relations of realism versus constructivism versus liberalism. As a result, the theories and findings developed in the book are more relevant for scholars and practitioners focused on current issues in nuclear nonproliferation.

Third, while the book’s attention to data analysis and case evidence might suggest that my focus is on empirical testing rather than theory building, the opposite is true. While I appreciate Lantis’s praise of the empirical elements of the book, the quantitative analyses and case studies are offered in service of theory—they are there solely to test novel theories of how the regime works. I do share Lantis’s frustration about my inability to use recent developments—the Treaty on the Prohibition of Nuclear Weapons (TPNW), for example—as test cases for my theory. This is one downside to quantitative empirical approaches; we do not yet have enough data on TPNW membership to make reasonable inferences about whether the treaty supports or contradicts my theory.10

Lantis also criticizes the narrowness of the book’s focus, arguing that my emphasis on “a single treaty” misses the complexity of the nonproliferation regime. But the book spends multiple chapters developing the idea of the nonproliferation regime as a full regime complex—the system of nested, overlapping agreements and institutions that characterize some areas of international cooperation.11 An important finding from the book is that the regime is much more than just the NPT, and scholars who consider only that cornerstone treaty will miss important drivers of nuclear restraint. To make this step easier for future researchers, the book develops a new measure of each country’s embeddedness in the wider regime, using data on 32 nonproliferation and nuclear security agreements. The result—what I call a nonproliferation score—can help scholars and analysts better understand the ways in which membership in the wider regime has shifted over time or affected other important phenomena in international politics.

More generally, though, the book uses the nonproliferation regime as a particularly rich case with which to examine broader questions about the functioning of international security institutions. How do these institutions work? Why do states join and comply? Why are some states punished for cheating while others are not? Why do these institutions appear so successful? These central questions—and the book’s findings—are applicable to many other institutions and regimes in the international arena.


The three insightful reviews in this roundtable all make clear that research on the role and functioning of the nuclear nonproliferation regime is far from settled ground. They offer several useful pathways for better understanding the regime, and by extension, today’s broader nonproliferation challenges.