Contrary to popular belief, “the pursuit of nuclear weapons is rarely the story of a race to the bomb at any cost” (p. 1). Such is the argument that Lisa Langdon Koch makes in her new book, *Nuclear Decisions: Changing the Course of Nuclear Weapons Programs*. Though much of the political science scholarship has heretofore been laser-focused on weapons acquisition and has not scrutinized the nonlinear pathways states have taken in their nuclear trajectories, this variation in historical experience is exactly where Koch focuses her analysis. She asks, “Why does the pursuit of nuclear weapons look so different across cases? How can we make sense of the range of paths to and away from the bomb?” (p. 2).

Koch examines the nuclear decisions that state leaders make while operating within different domestic and international environments. Those environments then affect leaders’ beliefs and preferences about nuclear weapons and the role they might play in serving their state’s interests. Specifically, Koch argues that “two crucial features of the political environment affect nuclear decision-making,” and that “leaders make decisions ... [within] changing international and domestic contexts” (p. 3). This intuitive argument deals with both the structure of the international system and domestic political factors. First, Koch identifies three different “proliferation eras,” where each successive historical period offers different political and structural conditions that constrain or encourage nuclear weapons development. Second, and across time, “domestic scientific and military organizations may intervene to bring about, or prevent, a nuclear decision that could redefine a state’s course to the bomb” (p. 3). This theoretical two-step is both top-down (international structural) and bottom-up (domestic organizational) and when combined, helps Koch articulate her explanation for the sometimes circuitous nuclear decisions observed throughout history.

The story Koch tells is centrally about the role that internal actors play in providing critical expertise to national decision-makers who are often ill-equipped to navigate high-level considerations. Leaders rarely come into office with the technical or strategic knowledge to understand nuclear development and related issues. Consequently, Koch asserts that “constraints on decision-makers’ access to and understanding of the range of choices and possible outcomes create an environment in which the expert organizations involved in the state nuclear weapons program enjoy a heightened ability to strategically shape decision-makers’ beliefs and preferences about the value of that program” (p. 36). The theoretical mechanism that Koch terms “expert organizational influence”
rests on two independent variables that measure an organization’s capacity to inform and influence a leader: “One measures the capacity of the state nuclear agency that is most directly responsible for nuclear weapons-related research and development, and the other measures the capacity of the state military organization” (p. 42). In other words, because of informational advantages derived from having highly skilled and compartmentalized information about a nuclear program, both scientific and military officials are well positioned to exert influence on leaders’ understanding of nuclear matters, contingent on the access and organizational capacity to do so. The influence offered, however, can vary across the two types of organizations.

On the nuclear-scientific side, Koch argues that self-interest pushes a nuclear agency’s preferences toward acceleration of a nuclear program. This organizational preference comes from an interest in greater funding, advancement of scientific knowledge, more staff for research and development, and better facilities and equipment. By contrast, a state military organization may offer more complicated and varied preferences that reflect multiple competing goals. While a military cares about external security for its state, it simultaneously cares about its own power, resources, and survivability. To the extent that nuclear weapons are seen as offering a strong deterrent for the state as well as prestige and resources for the military organization, the external and internal goals will be in sync. However, because nuclear weapons may be seen as merely deterrent weapons and not tools for warfighting, military organizations may oppose their acquisition. Further, to the extent that nuclear pursuits, which are significant and slow to come to fruition, drain precious resources away from conventional weapons that can be used soon in defense of the state, militaries may stand against their development. Last, interservice rivalries within a military apparatus may further stratify the landscape: “based on their roles and needs, different branches of the military may perceive nuclear weapons as either helpful or harmful to their interests” (p. 50). In the end, Koch sets out to “measure this balance of preferences within a state’s military organization,” allowing for the possibility that it may vary internally within the state and either lend support to or undermine efforts toward nuclearization (p. 51).

According to Koch’s argument, therefore, scientific nuclear agencies with greater access to leaders should accelerate nuclear programs and seek to prevent reversals; military organizations, by contrast, may be less likely to advocate for acceleration and instead prefer funding prioritization to conventional capabilities. Koch embeds this focus on the domestic nuclear context within variation in the historical period that similarly imposes constraints on and provides opportunities for nuclear decision-making, this time stemming from the evolution of the international nuclear environment. Koch describes three eras of consequence: the initial, permissive period (1941-64), the second or transition period (1965-74), and the third or nonproliferation regime period (1975 to the present). Each epoch has particular attributes. In the permissive period, parties interested in pursuing nuclearization encountered an international system with few constraints and widespread cooperation on nuclear efforts. The second period showcased initial superpower interest in nonproliferation and the beginnings of related norm evolution. Finally, the present, nonproliferation regime era, imposes significant constraints on interested nuclear parties and has exhibited nuclear nonproliferation norm consolidation.[1] Using case studies, Koch “investigates whether and how [these] structural features of the international system ... [combined with] the key domestic organizations’ nuclear preferences and capacity to influence the leader affect nuclear decision-making” (p. 79).

There are many commendable aspects of Koch’s study. First, the book presents a very useful expansion of traditional nuclear dependent vari-
ables beyond the simple binary of nuclear weapons’ possession to decisions along the path-
way. Instead, Koch focuses on a “different conceptualization of nuclear weapons programs: ... they are defined by decisions to accelerate or reverse nuclear development” (p. 8). This move mirrors an earlier one in the deterrence scholarship that eventually expanded the analysis beyond existential deterrence (i.e., that deterrence is created merely by possessing any nuclear weapons), to instead explore different nuclear postures and latent capacities and their varying deterrence utility.

Koch’s exploration similarly expands our analytical focus by offering a useful illumination of the nuclear pathway including “the decisions that shape the path of [a program’s] development” (p. 23).

Second, Koch’s argument about expert organizational influencevaluably combines factors from both the domestic and structural realms. In advancing her claims, Koch appropriately problematizes existing arguments from the literature, including those centered on government interference,[3] security,[4] what Koch calls adversity (economic constraints, sanctions, and military strikes),[5] and static conceptualizations of leader characteristics,[6] which seemingly fail to explain the variation Koch examines.

Third, Koch’s book is engaging in ongoing and important developments in the nuclear scholarship writ large. Koch does this by joining the wave of nuclear literature that has moved beyond structural considerations to examine causal factors within a state’s domestic environment.[7] Though leaders are an important element of Koch’s theoretical story, her analysis adds to more traditional leader-centric arguments in the nuclear domain. [8] Specifically, Koch advances our understanding of nuclear decision-making by embedding leaders and illuminating their decisions within a complex domestic information ecosystem. While Koch is hardly the first to focus on the role of scientific communities within nuclear proliferation, her

analysis adds to our understanding of the important role of key scientific communities within nuclear considerations.[9] Moreover, if we consider these two key domestic organizations—the scientific and military communities—as important influencers, they become part of a growing turn in the scholarship to explore advisors more broadly within foreign policy decision-making.[10] As I’ve argued elsewhere, it is high time that advisors get the attention they deserve in analyses of critical phenomena within international relations.[11]

Finally, Koch’s presentation of her argument is laudable. Despite being a seemingly traditional first book, the structure offers a nice deviation from the norm, presenting her theory across three chapters. She describes in turn the proliferation curves, where Koch plots different states’ developments over time and unpacks the dependent variable of decisions; the domestic context and relevant scientific and military actors; and the structural considerations of the proliferation eras. The content of especially the curve chapter (chapter 2) and the era chapter (chapter 4) won’t be novel contributions for those well versed in this empirical space. Nevertheless, they will serve as useful primers for newer readers of nuclear history and helpful resources for many classrooms and syllabi.

As with any study, however, there are questions left unanswered and issues unexplored. While as noted above, it was appealing as a reader to have the three-chapter presentation of the theory, analytically the long wind up sometimes obscures Koch’s central contention. It would have been useful somewhere in the first half of the book to encounter a simple diagram or chart, pulling the many variables together for a visual presentation of the argument. Such a diagram, paired with a full articulation of the argument’s observable implications, would have been a helpful guide prior to reading the case chapters.

Additionally, the empirical strategy Koch articulates on pages 77-81 seems incomplete. While I
appreciate Koch’s choice to “examine country cases both within and across the different proliferation environments,” the choice of which countries is left unjustified (p. 77). Koch explores Soviet, French, and Israeli proliferation within the permissive period, but why not include the United States, the United Kingdom, or China? The transition period covers programs in Sweden, South Korea, and India. However, there were many more states with active nuclear programs during this period so the selection of these three among them remains without justification. Similarly, Koch describes the Pakistani, South African, and Brazilian experiences during the nonproliferation period, but does not detail Iraq, North Korea, or Iran. Whether these cases were selected to rule out alternative explanations, hold potential confounders constant, or to highlight the different aspects of the theoretical mechanisms would have been useful to understand.[12] Moreover, and related to case selection strategy, I would have appreciated an explicit articulation of why the relevant comparison for Koch’s analysis is among states with nuclear programs, as opposed to between states both with and without them. Implicit in the manuscript is that the process by which states develop nuclear programs is untethered to the subsequent progress or lack thereof. Given that the present research design is unable to measure the behavior of states that do not have a nuclear program in the first place, Koch’s approach appears to assume that variation within the universe of analysis is not subsumed by variation outside. While I’m open to this possibility, I would have liked to hear Koch’s perspective.

The empirical section also lacks a robust discussion of variable operationalization and measurement. I expected to find Koch explicitly define and articulate the process by which she would use documentary and secondary source evidence to code all relevant variables. Indeed, it is seemingly customary in the academic literature to specify this process ex ante, that is, before diving into the empirical research. The closest Koch gets is her statement that she “conducted extensive case research, relying primarily on government documents and the existing case literature” (p. 78). While useful, this information does not elucidate what kinds of materials she sought out in order to define which variables, and what kinds of evidence would have been useful theoretically to get traction on the preferences she sought to capture. Absent this kind of ex-ante exposition and lacking the observable implications description noted above, a skeptical reader might be concerned about post-hoc case fitting in the empirical chapters. This issue is especially glaring regarding the potential competing preferences she expects might exist inside military organizations. Koch herself notes that “a state military … will hold competing organizational interests that may either reduce or increase the likelihood of a nuclear acceleration decision” (p. 52). It would have been therefore useful to know how Koch expected to make critical coding determinations in the complicated information environment she sought to navigate.

Finally, while I enjoyed reading much of the history that Koch marshals in the case studies, I remain somewhat unconvinced of the causal role of Koch’s argument. Take the transition period chapter, chapter 5, as one example. The first case treated is that of the Soviet Union’s nuclear program. Koch carefully notes the role of well-placed and pro-nuclear individuals Commissioner for Science Sergey Kaftanov and head of police and espionage L. P. Beria, who were able to encourage Soviet leader Joseph Stalin in the direction of nuclear progress, while foreclosing access to antinuclear opponents with different preferences. At the same time, absent information confirming that Stalin never heard such dissenting voices and documenting why the relevant actors behaved as they did, it’s hard to know whether the mechanisms Koch offers are doing the theoretical work.

The landscape grows more complicated with the Israeli case study. Here Koch argues that the
scientific and military communities played a significant role in slowing down Israel's nuclear development. While it is reasonable to conclude that these domestic actors shaped some of what transpired, it's hard to understand the landscape in which these actors operated absent critical environmental conditions understood and substantive choices made by the Israeli leadership. For example, Israel's nuclear program developed under the cover of extreme secrecy, something necessary given the balancing act needed to keep both American and French suppliers happy. Further, Koch herself notes that “[Israeli prime minister David] Ben-Gurion had founded the agency [Israeli Atomic Energy Commission] by secret order rather than codifying it into law.… Several aspects of the new organization were left deliberately ambiguous…. This ambiguity allowed Ben-Gurion to proceed with a nuclear program in secrecy, without involving the military, the parliament, or other officials who might disagree with the prime minister’s actions” (p. 94). It seems consistent with facts on the ground that Ben-Gurion understood his fractious domestic environment and acted to design a bureaucracy that would facilitate his pursuit of weapons. Furthermore, the nuclear pursuit happened simultaneous to needed growth in the conventional forces, allowing both to develop in parallel. As Koch says, “Ben-Gurion essentially threaded the needle, pursuing both conventional modernization and nuclear development at the same time, within existing limits” (p. 99). Within this context and reading Koch’s own words, I find it difficult to put the causal weight on the domestic actors shaping leaders’ preferences; it seems equally plausible that leaders understood their constraints and acted strategically within them.

If the Israeli case brings structural considerations and leaders’ choices to the fore, the French case firmly establishes the role that leaders indeed play in shaping nuclear decisions. Koch starts by articulating her coding of the French scientific establishment as mixed, but more pro-nuclear. Conversely, she says, the French military was more cohesively opposed. Nevertheless, as the French history develops, it became clear that French leaders, including prime minister Charles de Gaulle and powerful actors within the Atomic Energy Commission (CEA) most critically, elevated or sidelined domestic actors who stood in their way. The CEA heads themselves, however, had more or less influence, depending on who was in the prime minister’s office (p. 104). This last point is consistent with Koch’s argument that incorporates sub-state actors’ capacity to shape leaders as based in part on their access to them. That said, it seems appropriate to consider that the causal chain might start not with the bureaucracy as Koch suggests, but rather with the leader who is making bureaucratic choices in line with his ultimate nuclear goal.

My conclusion is thus that leaders create a more or less permissive condition for domestic actors to hold sway over nuclear decisions, depending on what they are trying to achieve. This bottom line is somewhat different than the causal story Koch wishes to impart, which places national leaders in a more background role. In the end, it would have been helpful, at least for this reader, for Koch to lean into how her argument works in conjunction with leader-based arguments as opposed to setting up leader-based theories as alternatives. Koch’s own narrative affords a more significant role for leaders acting strategically than the initial theoretical presentation lets on.

These criticisms aside, Koch’s Nuclear Decisions is an important addition to the scholarship on nuclear proliferation. Her argument usefully combines both structural and domestic factors and her empirical work offers historical richness many will enjoy reading. In the current international environment with nuclear weapons issues top of mind, Koch’s analysis helps advance an urgent and ongoing conversation.

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Notes

[1]. See pages 55-56 for an overview of the three periods.


[7]. See, for example, Christopher Way and Jessica L. P. Weeks, “Making It Personal: Regime Type and Nuclear Proliferation,” American Journal of Political Science 58, no. 3 (July 1, 2014): 705–19; Braut-Hegghammer, Unclear Physics.


Roundtable Review of Rachel Elizabeth Whitlark, *All Options on the Table: Leaders, Preventive War, and Nuclear Proliferation*, forthcoming.

[12]. The closest Koch comes are statements such as this one on page 83: “Nuclear decisions were made by both strong and weak leaders, within different types of political regimes, and in security contexts ranging from rivalry to existential.” This statement could imply that the cases included in this empirical chapter (chapter 5) are designed to help rule out rival explanations about leaders, regime type, and security drivers. If that was the author’s intention, an explicit articulation to that end should have been included.

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