



## Issue-Area and Foreign Policy Revisited

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# Issue-area and foreign policy revisited

Matthew Evangelista

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One of the long-unresolved debates among students of world politics concerns the question of what accounts for variations in processes and outcomes of foreign policies within and between states. One school of thought holds that differences in the characteristics of the countries in question (large versus small, democratic versus authoritarian, industrialized versus developing, and so forth) lead to differences in their foreign policies. In the contemporary debate, this view is represented by those who emphasize domestic structures in particular countries as a means of explaining their divergent foreign economic policies.<sup>1</sup> Others argue that the important differences are not so much between countries as between issue-areas. The proposition was stated most clearly by William Zimmerman, who argued that “differences in policy process across issue areas within a given state, the United States or the Soviet Union as cases in point, may be as great as differences in foreign-policy process within a particular arena of power for each.”<sup>2</sup> Some of the early literature on issue-area, for example James Rosenau’s elaboration of a “pre-theory” of foreign policy, incorporated variables for type of polity and type of economy, along with issue-area—in effect, combining both schools of thought in a complicated matrix.<sup>3</sup>

In a 1980 review of the issue-area literature, William Potter quotes Zim-

For criticisms and suggestions, I am grateful to Stephen Krasner, to three anonymous reviewers, and to the participants in the session entitled State, Society, and Security Policy at the 1987 meeting of the American Political Science Association, where an early version of this article was presented.

1. Peter J. Katzenstein, ed., *Between Power and Plenty: Foreign Economic Policies of Advanced Industrial States* (Madison: University of Wisconsin Press, 1978).

2. William Zimmerman, “Issue Area and Foreign-Policy Process: A Research Note in Search of a General Theory,” *American Political Science Review* 67 (December 1973), p. 1212.

3. James N. Rosenau, “Pre-theories and Theories of Foreign Policy,” in R. Barry Farrell, ed., *Approaches to Comparative and International Politics* (Evanston, Ill.: Northwestern University Press, 1966), pp. 27–92.

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merman and points out that his hypothesis has yet to be tested. He proposes that the case-study method of focused comparison, articulated by Alexander George, would constitute an especially appropriate means of evaluating Zimmerman's hypothesis.<sup>4</sup> In a later discussion, Potter suggests that it would be useful to test Zimmerman's hypothesis in the issue-area of Soviet national security policy by analyzing several phases of a decision-making process.<sup>5</sup> In the present article, I take up these suggestions by summarizing the conclusions of a focused comparison of several cases within the issue-area of Soviet security policy; in particular, I analyze the process by which major innovations in military technology are developed in the Soviet Union. This article goes beyond what Potter proposes in comparing the Soviet process of weapons innovation to the American one, by summarizing the results of a series of comparable U.S. cases.<sup>6</sup> As Zimmerman himself suggested, "The task of comparison may be well served if we hold issue area constant and depict the manner by which, within a given issue area, differences in political structure and political culture affect the general contours of the policy process."<sup>7</sup> By adopting this comparative method, the present study seeks to evaluate the relative merits of the issue-area and domestic structural approaches and to contribute to the debate over the sources of variance in foreign policy process and outcome.

### The relevance of domestic structures

Accounting for the foreign policies of states on the basis of their domestic structures is as old as Thucydides. For better or worse, his comparison of the open society of Athens with the closed society of Sparta served for a time as a model for the study of international relations in the twentieth century. Especially during the 1950s, similar distinctions—between, for example, the foreign policies of "totalitarian" versus "democratic" states—

4. William C. Potter, "Issue Area and Foreign Policy Analysis," *International Organization* 34 (Summer 1980), pp. 411–12. For discussions and examples of this method, see Alexander L. George and Timothy J. McKeown, "Case Studies and Theories of Organizational Decision Making," *Advances in Information Processing in Organizations* 2 (1985), pp. 21–58; Alexander L. George, "Case Studies and Theory Development: The Method of Structured, Focused Comparison," in P. G. Lauren, ed., *Diplomacy: New Approaches in History, Theory, and Policy* (New York: Free Press, 1979), pp. 43–68; and A. L. George and R. Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974).

5. William C. Potter, "The Study of Soviet Decisionmaking for National Security: What Is to Be Done?" in Jiri Valenta and William Potter, eds., *Soviet Decisionmaking for National Security* (London: Allen & Unwin, 1984), pp. 298–307.

6. The case studies come from Matthew Evangelista, *Innovation and the Arms Race: How the United States and the Soviet Union Develop New Military Technologies* (Ithaca, N.Y.: Cornell University Press, 1988), although they are used in the book to address the debate over internal versus external determinants of security policy rather than the debate over issue-areas.

7. Zimmerman, "Issue Area and Foreign-Policy Process," p. 1209.

became quite commonplace.<sup>8</sup> Some proponents of the issue-area approach tried to change all that, in the interest of developing a general theory of foreign policy. Zimmerman argued that “viewed against an issue area framework, the traditional dichotomization of authoritarian and pluralist foreign-policy processes needs re-examination.”<sup>9</sup> Viewing both the United States and the Soviet Union as “reasonably integrated modern states,” he assumed that their policy processes for a given issue-area would be more similar than previous scholarship had maintained.<sup>10</sup>

Yet students of international politics have persisted in seeking explanatory value in domestic structures. Consider, for example, the work of Peter Katzenstein and his colleagues on the foreign economic policies of advanced industrial states. They benefited from the insights of Barrington Moore, Jr., and Alexander Gerschenkron, who discussed the effect that the timing of industrialization and the pressure of the international system had on the domestic structures of states.<sup>11</sup> Moore argued that these factors produced three possible roads to modernity: democratic, fascist, and communist. Katzenstein maintained, however, that the category of “democratic” states was too broad to account for the variety of ways in which such states respond to common international economic challenges, such as the 1973 oil crisis. He and his colleagues sought to explain—still keeping within the tradition of Gerschenkron and Moore—how different domestic structures, especially the relative strength of state and society, influence policy objectives, instruments, and outcomes.<sup>12</sup> Thus, while the proponents of the issue-area approach sought to collapse some of Moore’s categories (democratic and communist, in the case of the United States and the Soviet Union) in the interest of generality, proponents of the domestic structural approach argued for greater disaggregation in the interest of validity.

### National security as an issue-area

The domestic structural analysis, at least as it has been explicated by its proponents, does not really constitute a comprehensive alternative to the issue-area approach. The reason is that these analysts accept the contention that different issue-areas involve different policy instruments and actors,

8. For a discussion, see Norton E. Long, “Open and Closed Systems,” in Farrell, *Approaches to Comparative and International Politics*, pp. 155–66.

9. Zimmerman, “Issue Area and Foreign-Policy Process,” p. 1212.

10. *Ibid.*, p. 1204.

11. Barrington Moore, Jr., *Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World* (Boston: Beacon Press, 1966); Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1962), chap. 1.

12. Katzenstein, *Between Power and Plenty*. For a related discussion, see James R. Kurth, “The Political Consequences of the Product Cycle: Industrial History and Political Outcomes,” *International Organization* 33 (Winter 1979), pp. 1–34.

even within a relatively limited sphere such as foreign economic policy.<sup>13</sup> Advocates of domestic structural approaches do not choose to aggregate issue-areas in order to compensate for their disaggregation of types of democratic polities.<sup>14</sup> The implication for the study of national security policy is clear: it should be considered as distinct from other issue-areas. Katzenstein implied as much when he wrote that it was “odd that the recent shift from military to economic issues in international politics was not accompanied by a corresponding shift from foreign to domestic political analysis.”<sup>15</sup> This is the traditional distinction between the “high politics” of security and the “low politics” of economics. In other words, while economic policy demands analysis of the domestic structure, military policy can be adequately explained at the international level of analysis.

Even proponents of domestic structural approaches who seek to demonstrate the relative autonomy of the state (defined as the central decision-makers and bureaucratic apparatus) do not view security policy as germane to their concerns. Stephen Krasner, for example, explicitly argues that his analysis of the United States as a weak state in implementing foreign economic policy would not be relevant for the military sphere: “A state that is weak in relation to its own society can act effectively in the strategic arena because its preferences are not likely to diverge from those of individual societal groups.”<sup>16</sup> Krasner maintains that one could safely ignore the domestic level of analysis in the area of security policy because “it could be assumed that all groups in society would support the preservation of territorial and political integrity.”<sup>17</sup> Theda Skocpol, in her review of current research on the state, also endorses Krasner’s notion that even a weak state can act autonomously from societal forces in the conduct of strategic policy.<sup>18</sup>

Many advocates of the issue-area approach would endorse the separation of the military-security area from other policy areas.<sup>19</sup> Most of them would,

13. Stephen Krasner, for example, describes U.S. commercial and monetary policies as distinct issue-areas in “United States Commercial and Monetary Policy: Unravelling the Paradox of External Strength and Internal Weakness,” in Katzenstein, *Between Power and Plenty*, pp. 51–87.

14. In fact, a recent study stressed the need to distinguish not only between issue-areas but across historical periods as well. See the special issue of *International Organization* 42 (Winter 1988), “The State and American Foreign Economic Policy,” G. John Ikenberry, David A. Lake, and Michael Mastanduno, eds., especially Ikenberry’s conclusion.

15. Peter J. Katzenstein, “International Relations and Domestic Structures: Foreign Economic Policies of Advanced Industrial States,” *International Organization* 30 (Winter 1976), p. 2.

16. Stephen D. Krasner, *Defending the National Interest: Raw Materials Investments and U.S. Foreign Policy* (Princeton, N.J.: Princeton University Press, 1978), p. 70.

17. *Ibid.*, p. 329.

18. Theda Skocpol, “Bringing the State Back In: Strategies of Analysis in Current Research,” in Peter B. Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back In* (Cambridge: Cambridge University Press, 1985), pp. 12–13. Skocpol also quotes J. P. Nettl, “The State as a Conceptual Variable,” *World Politics* 20 (July 1968), pp. 559–92, to the same effect.

19. See Potter’s discussion in “Issue Area and Foreign Policy Analysis.”

however, find it difficult to accept the argument that domestic politics do not matter for the prosecution of military policy. And some of them would maintain that the military policy process shares many features in common with domestic policy processes. Indeed, the origins of the issue-area perspective are found in the study of American domestic politics and public policy, in particular the work of Robert Dahl and Theodore Lowi.<sup>20</sup> Lowi's pioneering attempt to apply his analysis of domestic politics to the sphere of foreign policy devoted considerable attention to the domestic politics of U.S. military policy. He sought to "destroy any claim that foreign policy-making is a fundamentally different policy-making system, or one that is in any considerable way insulated from domestic political forces."<sup>21</sup> James Kurth developed a typology very much in the Lowi tradition in order to explain the politics of American weapons procurement in terms of domestic factors,<sup>22</sup> while William Zimmerman, in presenting his hypothesis, speculated that the Soviet weapons-procurement process in its domestic aspect might (like the American one) fall into one of the categories ("distribution") that he adopted from Lowi.<sup>23</sup> Thus, the advocates of the issue-area approach maintain that an understanding of domestic politics is essential for explaining military policy in the United States and probably in the Soviet Union as well.

### State, society, and security policy

It is disappointing and somewhat surprising that proponents of domestic structural approaches to international political economy have assumed away the effects of domestic politics on security policy.<sup>24</sup> The value of a domestic structural paradigm would be enhanced if its explanatory power were able to account for issue-areas beyond economics. Application of a domestic structural approach to security policy does pose a problem, however: Which

20. Robert A. Dahl, *Who Governs: Democracy and Power in an American City* (New Haven, Conn.: Yale University Press, 1961); and Theodore J. Lowi, "American Business, Public Policy, Case-Studies, and Political Theory," *World Politics* 16 (July 1964), pp. 677-715.

21. Theodore J. Lowi, "Making Democracy Safe for the World: National Politics and Foreign Policy," in James N. Rosenau, ed., *Domestic Sources of Foreign Policy* (New York: Free Press, 1967), p. 314.

22. James Kurth, "A Widening Gyre: The Logic of American Weapons Procurement," *Public Policy* 19 (Summer 1971), pp. 373-404. Kurth related four modes of change—quantitative, innovative, renovative, and redistributive—to four modes of causation—bureaucratic politics, bureaucratic process, bureaucratic-corporate alliances, and the economic system.

23. Zimmerman, "Issue Area and Foreign-Policy Process," p. 1211.

24. This is especially so, considering the extent to which domestic, particularly bureaucratic, politics have been emphasized in the literature on security policy. See, for example, Graham Allison and Morton H. Halperin, "Bureaucratic Politics: A Paradigm and Some Policy Implications," in Richard H. Ullman and Raymond Tanter, eds., *Theory and Policy in International Relations* (Princeton, N.J.: Princeton University Press, 1972); and Graham Allison and Frederic A. Morris, "Exploring the Determinants of Military Weapons," *Daedalus* 104 (Summer 1975), pp. 99-129.

conception of the state is most appropriate?<sup>25</sup> Models that posit a sharp distinction between state apparatus and society (in order, for example, to evaluate state “autonomy”) are not particularly useful for studying security policy. How, for example, should one characterize a scientist working for a private corporation that depends entirely on Pentagon contracts—as a societal or state actor? Or a military officer whose entrepreneurial efforts on behalf of a new weapons system run counter to official policy (as in the case of advocates of ballistic missile defenses in the years preceding Ronald Reagan’s “Star Wars” speech<sup>26</sup>)? The issue is perhaps more problematic for the Soviet Union, where one is hard pressed to identify any nonstate actors involved in the formulation of security policy.

One solution is to adopt the approach used by Katzenstein and others in distinguishing countries by historically determined characteristics of their state and society—for example, the degree of centralization within the policymaking apparatus.<sup>27</sup> Stephen Skowronek has proposed a number of comparable ways to evaluate the strength of a given state: concentration and centralization of authority, penetration of institutional controls from the center throughout the territory, and specialization of institutional tasks and roles within the government.<sup>28</sup> On such comparative scales, the United States and the Soviet Union would appear to lie at opposite ends of a spectrum.

A recent study of the foreign economic strategies of Eastern European states argues that Katzenstein’s domestic structural analysis is not particularly useful for understanding political-economic systems of the Soviet type. It focuses instead on “the unique political and economic structure of members of the socialist bloc” and employs concepts that treat the Soviet-type system as *sui generis*.<sup>29</sup> Such a rejection of the domestic structural approach

25. For a review of the recent literature on the state, see Stephen D. Krasner, “Approaches to the State: Alternative Conceptions and Historical Dynamics,” *Comparative Politics* 16 (January 1984), pp. 223–46. Also relevant is the article by James G. March and Johan P. Olsen, “The New Institutionalism: Organizational Factors in Political Life,” *American Political Science Review* 78 (September 1984), pp. 734–49.

26. On the origins of the Strategic Defense Initiative, see G. Allen Greb, “Science Advice to Presidents: From Test Bans to the Strategic Defense Initiative,” Research Paper no. 3, Institute for Global Conflict and Cooperation, University of California, San Diego, 1987; and William Broad, *Star Warriors* (New York: Simon & Schuster, 1985).

27. See especially the conclusion in Katzenstein, *Between Power and Plenty*.

28. Stephen Skowronek, *Building a New American State: The Expansion of National Administrative Capacities* (New York: Cambridge University Press, 1982), p. 20; and the discussion in Krasner, “Approaches to the State.”

29. Ellen Comisso, “Introduction: State Structures, Political Processes, and Collective Choice in CMEA States,” *International Organization* 40 (Spring 1986), p. 195, in the special issue on “Power, Purpose, and Collective Choice: Economic Strategy in Socialist States,” Ellen Comisso and Laura D’Andrea Tyson, eds. The concepts Comisso employs to distinguish between socialist states—“patrimonialism” and “collegiality”—are not applied to any of the non-CMEA states that are also covered in the volume. The terms appear in any case to be mainly a restatement of the standard distinction in Soviet politics between the totalitarian and oligarchic models. For a discussion, see Jerry Hough, *The Soviet Union and Social Science Theory* (Cambridge, Mass.: Harvard University Press, 1977), pp. 19–48.

to the Soviet Union and Eastern Europe may be unwarranted, since variables such as centralization of decision-making authority and the relative strength of state and society would still appear relevant even in states that seem quite similar.<sup>30</sup> Furthermore, there is a long tradition of comparative historical analysis of Russia and the West—most notably, the work of Gerschenkron and Moore—that identifies the importance of differences in domestic structures for both economic and security policy.

Contemporary adherents to the domestic structural approach have tended to focus mainly on economic policy. Yet Gerschenkron and Moore have always called attention to the relationships among military exigencies, the pattern of industrialization, and the relative strength of state and society in a given country. Both Gerschenkron and Moore were, as well, experts on Russia and the Soviet Union. Indeed, the Russian case illustrates the relationship between state, society, and security policy particularly well. In order to see how a domestic structural approach would differ from an analysis based on issue-area, we must understand the historical evolution of domestic structures in Russia.

The Russian pattern was very different from that of the United States and Britain. Those “early industrializing” countries took advantage of favorable geographic circumstances and a relative absence of international pressures to industrialize at a gradual pace. Industrialization was carried out by private manufacturers and financed by private capital; the limited role played by a weak state allowed for the development of democratic institutions. Russia differed as well from the second pattern of “late industrializers.” In Germany and Japan, the pressure of the international system and competition from more advanced countries required the state to take a leading role, for example in mobilizing capital for industrial investment. This pattern resulted in strong authoritarian states with weak societal forces and a consequent absence of democracy.<sup>31</sup> The third pattern of “late, late industrialization” is typified

30. The relative strength of state and society, for example, seems to account for differences in responses to external economic conditions of such ostensibly similar countries as Poland and Romania. In the 1970s, Poland’s state and party apparatus was crumbling while societal forces, particularly workers, were growing in strength. The result was an inability to respond to economic shocks with the type of austerity measures adopted by Romania. By contrast, Romania, like some authoritarian regimes in the Third World, was able to squeeze a weak society because Nicolae Ceaucescu controlled the instruments of a strong, centralized state. I draw these conclusions from the relevant articles in the special issue of *International Organization* edited by Comisso and Tyson, although the editors might disagree. See Ronald H. Linden, “Socialist Patrimonialism and the Global Economy: The Case of Romania”; and Kazimierz Poznanski, “Economic Adjustment and Political Forces: Poland since 1970,” both in *International Organization* 40 (Spring 1986), pp. 347–80 and 455–88.

31. This summary draws on Gerschenkron, *Economic Backwardness*; and Moore, *Social Origins*. Other important discussions of these ideas are found in Theda Skocpol, “A Critical Review of Barrington Moore’s *Social Origins of Dictatorship and Democracy*,” *Politics and Society* 4 (Fall 1973), pp. 1–34; Peter Gourevitch, “The Second Image Reversed: The International Sources of Domestic Politics,” *International Organization* 32 (Autumn 1978), pp. 881–912; and Kurth, “Political Consequences of the Product Cycle.”



by Russia and China. Under extreme international pressure, Communist elites in these countries undertook costly campaigns of forced-draft industrialization to catch up with their more advanced competitors. The political outcome of such "revolutions from above" included highly centralized, strong states with weak, even atomized societies.<sup>32</sup>

The pattern of sensitivity to foreign pressure leading to strong centralization and state intervention finds antecedents far back in Russian history.<sup>33</sup> The centralizing and bureaucratizing reforms of Peter the Great in the eighteenth century are mainly attributable to the requirements of war and the need to compete with more advanced neighbors such as Sweden.<sup>34</sup> A similar pattern is evident in the industrialization drive organized by Russian Minister of Finance Sergei Witte during the 1890s. It emphasized the development of railroads, the military importance of which Russia's international competitors had already made clear. The reforms undertaken during the first decade of the twentieth century, in the wake of Russia's defeat in the war against Japan, provide an additional example.<sup>35</sup>

During the Soviet period as well, one finds a strong relationship between military requirements and centralized, forced-draft industrialization. Stalin made the point in 1931 when he argued that it was necessary to overcome his country's economic backwardness: "We are fifty or a hundred years behind the advanced countries. We must make good this distance in ten years. Either we do it, or they crush us."<sup>36</sup> Stalin's ruthless policies of collectivization of agriculture and rapid industrialization were plainly intended to contribute to the buildup of Soviet military power, albeit at terrible cost to the populace. It seems apparent, then, that the international pressures faced by a late, late industrializer such as the Soviet Union affect the development of both military and economic policy by fostering the growth of a highly centralized, strong, hierarchically organized state at the expense of civil society.

Placed in its historical context, the domestic structural analysis appears quite relevant to a comparative study of Soviet and American military policy. If the insights derived from the analysis of foreign economic policy are applicable to the security sphere, they would predict very different policy

32. Moore, *Social Origins*. For discussion of a related pattern, see Ellen Kay Trimberger, *Revolution from Above: Military Bureaucrats and Development in Japan, Turkey, Egypt, and Peru* (New Brunswick, N.J.: Transaction Books, 1978).

33. Walter McKenzie Pintner and Don Karl Rowney, eds., *Russian Officialdom: The Bureaucratization of Russian Society from the Seventeenth to the Twentieth Century* (Chapel Hill: University of North Carolina Press, 1980).

34. See, for example, Vasili Klyuchevsky, *Peter the Great*, trans. Liliana Archibald (New York: Vintage, 1958).

35. Hugh Seton-Watson, *The Russian Empire, 1801–1917* (Oxford: Oxford University Press, 1967), p. 522. See also Alexander Gerschenkron, *Continuity in History and Other Essays* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1968), pp. 140–248.

36. See the discussion in David Holloway, "War, Militarism, and the Soviet State," *Alternatives* 6 (March 1980), pp. 59–92, from which the quote is taken.

processes between the United States and the Soviet Union. In this sphere, as in economic policy, one could characterize the United States as a weak state, whose fragmentation and decentralization of authority permit multiple inputs into the policy process from the “bottom up.”<sup>37</sup> Policy initiatives in the strong, centralized, hierarchical Soviet state, by contrast, come from the “top down.”<sup>38</sup>

This then constitutes the basis for the following evaluation of the domestic structural and issue-area approaches. The former predicts very different policy processes, while the latter predicts similar ones.

### **Weapons innovation in the United States and the Soviet Union**

In a recent comparative study, I analyzed the process of weapons innovation in the United States and the Soviet Union by undertaking a focused comparison of several cases on each side.<sup>39</sup> I broke down the innovation process into five stages for each country in order to identify the actors, the nature of political relations, and the policy mechanisms at each stage (see Table 1). This part of the article brings the findings from that study to bear on the debate between the issue-area and domestic structural approaches. It presents a summary of the main “process-tracing” case studies on the development of tactical nuclear weapons in the United States and the Soviet Union.

Tactical nuclear weapons have recently become familiar as the focus of Soviet-American negotiations on disarmament in Europe. Yet when they were first developed four decades ago, they were seen as a major innovation in military policy as well as in weapons technology. In the mid-1940s, atomic bombs were considered a scarce resource, intended primarily as a means of mass destruction to be employed against population centers and major strategic targets. The technical capability to produce relatively small, efficient, and lightweight nuclear weapons was demonstrated by the United States in the late 1940s, giving rise to the notion of using such weapons in support of ground troops on a battlefield. In the following section, I use the case of tactical nuclear weapons to describe how the U.S. process of innovation

37. The contributors to the special issue of *International Organization* entitled “The State and American Foreign Policy” argue that the U.S. state cannot be characterized as equally weak in all policy areas. This argument would not appear to hamper the utility of the “weak state” label for comparative purposes, especially in the U.S.–Soviet context.

38. The “top-down” versus “bottom-up” analysis draws on Zbigniew Brzezinski and Samuel Huntington, *Political Power: USA/USSR* (New York: Viking Press, 1963), especially pp. 202–30, and is developed in Matthew Evangelista, “Why the Soviets Buy the Weapons They Do,” *World Politics* 36 (July 1984), pp. 597–618. See also the discussion by Potter, “Study of Soviet Decisionmaking.”

39. Evangelista, *Innovation and the Arms Race*.

**TABLE 1.** *Stages in the process of weapons innovation in the United States and the Soviet Union*

<i>Stage</i>	<i>United States</i>	<i>Soviet Union</i>
1	<p><i>Technocratic initiative</i> Discovery of new technical possibilities; scientists advocate military applications.</p>	<p><i>Stifled initiative</i> Limited technical antecedents; some discussion of possibilities, but innovation constrained by established priorities.</p>
2	<p><i>Consensus-building</i> Scientists and military associates generate interest in new technology within the military-technical community.</p>	<p><i>Preparatory measures</i> Low-level efforts prepare broad technological background but continue to yield to higher-priority programs.</p>
3	<p><i>Promotion</i> Scientific, military, and industrial "entrepreneurs" promote the new weapon proposal within the military services, Congress, and the executive branch.</p>	<p><i>High-level response</i> Directed response to foreign initiative; beginning of reassessment of priorities from the top.</p>
4	<p><i>Open windows</i> External threats often serve as windows of opportunity for promoters within the military services to push a new weapon past the advanced research and development stage and into production.</p>	<p><i>Mobilization</i> Leadership endorses an all-out effort to pursue innovation as the nature of new priorities becomes evident; finds allies in the military to implement the new program.</p>
5	<p><i>High-level endorsement</i> Pentagon officials gain congressional support for mass production of a new weapon, justified with more specific reference to an external threat.</p>	<p><i>Mass production</i> Mass production of a new weapon coincides with implementation of new priorities, often publicly announced at the highest levels.</p>

typically works; then I turn to the Soviet case to determine whether the process is similar to or different from the American one.

### *American tactical nuclear weapons*

James Kurth, in an important 1971 article on American weapons procurement, made the following argument about the process of weapons innovation: "Because an innovative change is unfamiliar and sometimes expensive, it normally begins not in a decision at the higher levels of policymaking and budget-making but in technical and organizational procedures for research and development." He proposed "some kind of technocratic explanation" to account for the origins of new weapons.<sup>40</sup>

40. Kurth, "A Widening Gyre," pp. 396-97.

*Stage one: technocratic initiative (1945–48).* As Kurth's analysis predicts, the impetus for the development of tactical nuclear weapons was "technocratic" in nature.<sup>41</sup> In 1948, technical breakthroughs in the production of fissionable material and the design of nuclear explosive devices led certain American scientists, most notably J. Robert Oppenheimer, to consider the application of nuclear weapons to tactical battlefield situations. Only with the discovery by physicists and weapons designers of the means for making nuclear weapons more compact and efficient did the notion arise of using them for a wide variety of missions. The atomic scientists, through their key advisory positions in American military research and development, became the first advocates of tactical nuclear weapons.<sup>42</sup>

Oppenheimer himself explained in 1954 how he and the other scientists on the General Advisory Committee (GAC) to the U.S. Atomic Energy Commission were able to influence policy in the direction of programs they favored. The members of the GAC, Oppenheimer pointed out, "knew more collectively about the past of the atomic energy undertaking and its present state, technically and to some extent even organizationally" than the Atomic Energy Commission members did. Thus, "it was very natural for us not merely to respond to questions that the Commission put, but to suggest to the Commission programs that it ought to undertake."<sup>43</sup>

This "technocratic" argument runs contrary to the two most common explanations for the origins of American tactical nuclear weapons—that they were a rational response to Soviet superiority in conventional armed forces in Europe and that they were developed for bureaucratic reasons at the initiative of the U.S. Army. One of the earliest expressions of the first argument comes from the physicist Ralph Lapp:

The overwhelming troop superiority of the Soviet Union jeopardized the security of Western Europe. No means seemed in sight to oppose the crushing weight of Red divisions with Allied ground forces in comparable number. Lacking the man power the military leaders in the United States decided to employ weapon power against the threat of the Red Army. It was only natural to turn to the most potent of all weapons and to adapt it to the battlefield. Emphasis was therefore

41. The full documentation for the American case is found in Evangelista, *Innovation and the Arms Race*, chap. 4.

42. See, in particular, discussion of the Committee on Atomic Energy's Panel on Long-Range Objectives, which met under the auspices of the Department of Defense Research and Development Board and was chaired by Oppenheimer: *In the Matter of J. Robert Oppenheimer, Transcript of Hearing before Personnel Security Board and Texts of Principal Documents and Letters*, United States Atomic Energy Commission, originally published by the Government Printing Office in 1954, reprinted with an index and foreword by Philip M. Stern (Cambridge, Mass.: MIT Press, 1970), pp. 46–48 and 64 (hereafter cited as Oppenheimer Hearings); and Robert Gilpin, *American Scientists and Nuclear Weapons Policy* (Princeton, N.J.: Princeton University Press, 1962), p. 114.

43. Oppenheimer Hearings, p. 67.

placed upon the development of smaller-lighter A-weapons which might be used tactically to ward off the threat of Communist aggression.<sup>44</sup>

This account incorrectly describes the decision-making process and overstates the role of the Soviet Army. It appears that the threat of a Soviet conventional invasion of Western Europe was considerably exaggerated during the early postwar years.<sup>45</sup> Within three years of the end of the war, the Soviets had demobilized their wartime forces to a far greater extent than the United States was publicly willing to indicate.<sup>46</sup> The conventional balance in Europe in 1948, at the time tactical nuclear weapons were invented, did not substantially favor the Soviet side. Besides, at that time, those who pointed to the threat of a Soviet conventional invasion proposed atomic bombing by the Air Force Strategic Air Command (SAC) as the solution, not the development of tactical nuclear weapons.<sup>47</sup>

This observation gives rise to the notion that the Army initiated interest in tactical nuclear weapons as a means of wresting budgetary allocations away from SAC.<sup>48</sup> In fact, however, the Army in the late 1940s was preoccupied with securing passage of the universal military training act; when it came to nuclear strategy, "the army voluntarily subordinated its position to the air force" and endorsed strategic bombing.<sup>49</sup> This first stage finds only limited interest within the American military in employing nuclear weapons for tactical purposes.<sup>50</sup>

*Stage two: consensus-building (1949–50).* During the second stage in the development of tactical nuclear weapons, the atomic scientists began accumulating allies beyond the weapons laboratories. In order to get the weap-

44. Ralph Lapp, *The New Force: The Story of Atoms and People* (New York: Harper & Bros., 1953), p. 119.

45. Matthew Evangelista, "Stalin's Postwar Army Reappraised," *International Security* 7 (Winter 1982–1983), pp. 110–38.

46. See, for example, the remarks by a member of the first U.S. Joint Staff and NATO Standing Group, Brig. Gen. (USAF, ret.) Robert C. Richardson, "NATO Nuclear Strategy: A Look Back," *Strategic Review* 8 (Spring 1981), p. 38.

47. David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945–1960," *International Security* 7 (Spring 1983), pp. 3–71.

48. This view was put forward by, among many others, the first director of the Defense Department's Weapons Systems Evaluation Group, Philip M. Morse, in *In at the Beginnings: A Physicist's Life* (Cambridge, Mass.: MIT Press, 1977), p. 239.

49. Edward A. Kolodziej, *The Uncommon Defense and Congress, 1945–1963* (Columbus: Ohio State University Press, 1966), especially pp. 93–94; Lynn Eden, "Capitalist Conflict and the State: The Making of United States Military Policy in 1948," in Charles Bright and Susan Harding, eds., *Statemaking and Social Movements: Essays in History and Theory* (Ann Arbor: University of Michigan Press, 1984), pp. 233–61.

50. For example, during the academic year 1947–48, the Command and General Staff College at Fort Leavenworth offered a course called "Trends in Warfare" that discussed the implications of atomic weapons. The course syllabus gives no indication, however, that battlefield nuclear support for ground forces figured at all in the program. "Trends in Warfare I," Advance Sheet, in bound volume, *Regular Course, School of Personnel, 1947–1948, Set 6, Part I*, U.S. Army Command and General Staff College Combined Arms Library, Fort Leavenworth, Kans.

ons produced and deployed, it was necessary to rally support within the military. The scientists' efforts to this end got them embroiled in a conflict with proponents of a crash program to develop the hydrogen bomb. The H-bomb was the weapon most favored by SAC. There were also a number of weapons scientists, most notably Edward Teller, who supported the H-bomb. They and the Air Force, with some justification, saw tactical nuclear weapons as a threat to the successful development of their preferred weapon. Oppenheimer and his colleagues had to persuade some staunch military supporters of strategic nuclear warfare of the desirability of tactical alternatives. As Walter Whitman, a member of the GAC and director of the Pentagon's Research and Development Board in the early 1950s, explained with regard to Oppenheimer's role, "He more than any other man served to educate the military to the potentialities of the atomic weapon for other than strategic bombing purposes."<sup>51</sup>

The scientific opponents of the H-bomb were driven in part by a moral imperative to find an alternative to strategic bombing of innocent civilians with thermonuclear weapons. They also were determined to find a nuclear "solution" to American security problems that would make the H-bomb unnecessary. Ironically, development of tactical nuclear weapons became assured owing to a major expansion of the atomic program that included a crash program to develop the H-bomb.

*Stage three: promotion (1950–51).* President Harry Truman approved the H-bomb program on 31 January 1950. While opposition to the H-bomb may have continued to motivate the atomic scientists in their support of tactical atomic weapons even after that date, the same is not true for the weapons' other proponents. The years 1950 and 1951 saw a transformation to what can be considered a third stage in the development of these weapons. They were no longer pursued solely by scientists interested in their technological possibilities or their value as an alternative to the H-bomb. Now tactical nuclear weapons began to receive strong bureaucratic backing from military services—the Army and, to a lesser extent, the Navy—in addition to the continued interest of scientists and weapons designers. The Atomic Energy Commission, as well, began to show more enthusiastic support for tactical weapons, following Chairman David Lilienthal's resignation. These factors were reinforced by technical developments and by a major political event, the outbreak of the Korean War. In many respects, the war served as a catalyst for the efforts of the scientists and their allies in the military to promote their solution to the pressing security concerns of the day.

*Stage four: open windows (1951–52).* During the third stage in their development, tactical nuclear weapons were justified for their potential utility

51. Oppenheimer Hearings, pp. 497–98 and 505.

in Korea.<sup>52</sup> During the fourth stage, proponents of the weapons invoked the threat of a potential Soviet invasion of Western Europe—"the next Korea."<sup>53</sup> The Soviet threat to Europe provided a "window of opportunity" for promoters of tactical nuclear weapons to create a military requirement for them.<sup>54</sup>

Proponents of the weapons at this point included some sectors of the military bureaucracy, the government, and the scientific community of weapons designers. In order to secure a portion of the greatly expanded rearmament budget that followed the start of the Korean War, the Army (and, to some extent, the Navy) counterposed its tactical-nuclear solution to the solution favored by the Air Force—strategic bombing. The Army found allies within the government, such as Senator Brien McMahon, chair of the Joint Committee on Atomic Energy (JCAE), and members of the Atomic Energy Commission, most notably its chair Gordon Dean, who was McMahon's former law partner. While the proponents of tactical nuclear weapons, only a few months earlier, had been making their case in the context of the Korean War, they now shifted their emphasis to Europe, where their weapons were touted as an inexpensive means of countering a potential Soviet invasion.<sup>55</sup> Prototypes of the weapons were tested in the presence of troops, and tactics for their use began to be developed in some detail.

At this stage, the role of the military and the bureaucrats in the Atomic Energy Commission assumes more importance for explaining developments than does the role of the scientists. The two most prominent figures were McMahon and Dean. Their efforts entailed what Lowi refers to as overselling the threat and overselling the remedy. While tactical nuclear weapons were not given as high a profile as some of the programs Lowi discusses (such as the Marshall Plan), they did receive considerable public attention, especially in Congress.<sup>56</sup> McMahon, for example, in one speech on the Senate floor on 18 September 1951, promoted tactical nuclear weapons as the single most

52. See, for example, J. Robert Oppenheimer, "Comments on the Military Value of the Atom," *Bulletin of the Atomic Scientists* 7 (February 1951), pp. 43–45; Maj. Gen. James Gavin, "Tactical Uses of the Atomic Bomb," *Combat Forces Journal* 1 (November 1950), pp. 9–11; and Samuel Cohen, *The Truth About the Neutron Bomb* (New York: William Morrow, 1983), pp. 30–33.

53. To a certain extent, this practice had already begun during the previous period. See, for example, Tracy S. Voorhees, "To Prevent a 'Korea' in Western Europe," *The New York Times Magazine*, 23 July 1950, pp. 10ff.

54. The use of "windows" by policy entrepreneurs in American domestic politics is developed by John W. Kingdon in *Agendas, Alternatives, and Public Policies* (Boston: Little, Brown, 1984), chaps. 8 and 9.

55. See, for example, the partially declassified report of *PROJECT VISTA, A Study of Ground and Air Tactical Warfare with Especial Reference to the Defense of Western Europe*, 2 vols., 2 February 1952, Modern Military Branch, National Archives (MMB NA).

56. Not all of Lowi's programs were as prominent as the Marshall Plan. He also discusses the campaign for the United Nations, military aid to Greece and Turkey, the formation of NATO, and—in the context of the Eisenhower "New Look" policy—the production of tactical nuclear weapons. See Lowi, "Making Democracy Safe for the World," especially pp. 315–23.

promising solution to American security problems. As he stated, a “coming revolution in military firepower points the way out” of the dilemma posed by the high cost of weaponry. He argued that mass production of atomic weapons would make them cheaper than tanks and that U.S. production capacity was virtually unlimited: “I say that to produce fewer atomic weapons than we are physically capable of producing is, in the present crisis, unthinkable. We now have no choice but to pour out the stuff of which bombs are made literally by the ton.”<sup>57</sup> Later that month, Dean put forward a similarly upbeat vision of the coming atomic “revolution” in hearings conducted by the Senate Appropriations Committee.<sup>58</sup>

*Stage five: high-level endorsement (1952–55).* As the efforts of senators, representatives, and officials from the military and the Atomic Energy Commission increased, the importance of the nuclear physicists in promoting tactical nuclear weapons declined. While Oppenheimer and his colleagues continued to speak out in favor of developing capabilities for waging nuclear war on the battlefield, events were already overtaking them.

Major congressional figures joined with the members of the Atomic Energy Commission to push through another enormous expansion of the atomic program, finally bringing the subject of tactical nuclear weapons to the attention of President Truman himself as the main rationale for the expansion. The declassified minutes from the National Security Council meeting reveal that Truman did not have a sound grasp of the character of his nuclear weapons program, let alone the specific military arguments in favor of tactical applications. He did, nevertheless, approve the expansion.<sup>59</sup> The spring of 1952 witnessed the mass production of tactical nuclear weapons and their initial deployment to Europe (and, on naval aircraft carriers, throughout the world).<sup>60</sup>

*Summary of the five stages of American weapons innovation.* This overview supports the generalization that American weapons innovations begin at the lower levels of scientific and military bureaucracies and are pushed upward in a series of “consensus-building” stages.<sup>61</sup> The initiative comes

57. McMahon’s speech quoted in the *Bulletin of the Atomic Scientists* 7 (October 1951), pp. 297–99.

58. Gordon Dean, testimony before the Senate Appropriations Committee, *Second Supplementary Appropriations Bill for 1952*, 27 September 1951, 82d Congress, 2d Sess., p. 3.

59. Memorandum for the President, 17 January 1952, President’s Secretary’s File, Folder: Atomic Energy—Expansion of the Atomic Energy Program, pp. 1–2, Harry S. Truman Library, Independence, Mo.

60. These deployments are discussed in Memorandum for the U.S. Representative to the Standing Group, North Atlantic Military Committee, “Aircraft Attrition Rates for SHAPE,” 28 March 1952, RG 218, JCS, CCS 092 Western Europe (3-12-48), Section 132; and Memorandum for the Joint Chiefs of Staff from the Chief of Staff, U.S. Army, “Military Requirements for Atomic Weapons,” 26 May 1952, RG 218, JCS, CCS 381 (2-8-43), Section 21, MMB NA.

61. For a related discussion of “consensus-building” and innovation, see Samuel P. Huntington, *The Common Defense: Strategic Programs in National Politics* (New York: Columbia University Press, 1961), chap. 5.



not from an identified foreign threat or development but, instead, from the entrepreneurial efforts of those who first recognize the technological possibilities for new weapons. An external event or foreign threat often serves at a later stage as a “window,” which promoters of the weapons use to establish a military requirement. It is at this point that the weapons gain the attention of the top political leadership and the public and attract sufficient funding for mass production. In this case, the administration requested \$6 billion for expansion of the atomic program to produce tactical and strategic nuclear weapons. Gordon Dean anticipated that the costs would eventually reach \$9 billion, which was more than half the figure requested for Marshall Plan aid and was an amount, as he later described, “which well exceeds the combined capital investment of General Motors, U.S. Steel, du Pont, Bethlehem Steel, Alcoa, and Goodyear.”<sup>62</sup>

As the issue-area literature would suggest, each stage in the innovation process involves somewhat different actors and different political relations.<sup>63</sup> The next section evaluates the proposition that Soviet weapons innovation differs considerably from the American model, that it is a “top-down” rather than a “bottom-up” process.

### *Soviet tactical nuclear weapons*

The Soviet system inhibits the kind of low-level technocratic impetus that produces military innovations in the United States. During the early stages of the Soviet innovation process, one can, however, find some interest in and technical antecedents to a future innovation. Yet the centralized, secretive nature of the system discourages low-level initiative by inhibiting the free flow of information and by imposing a hierarchy of military and research goals.<sup>64</sup>

*Stage one: stifled initiative (1945–49).* In the case of tactical nuclear weapons, there is evidence of some early military interest at low levels.<sup>65</sup> According to Soviet memoir sources, students at Soviet military academies discussed among themselves tactical applications of the atomic bomb very shortly after learning of its use against Hiroshima and Nagasaki, even though they had no factual information on the weapons. Owing to the censorship that Stalin imposed on nuclear matters, even professors at the Frunze and General Staff academies were not allowed to discuss the implications of nuclear weapons with their students. As one former student explained: “We repeatedly tried to get the teachers to talk about the American superpowerful

62. Gordon Dean, *Report on the Atom*, 2d ed. (New York: Knopf, 1957), pp. 68–69.

63. This argument is developed in Evangelista, *Innovation and the Arms Race*, chap. 2.

64. *Ibid.*

65. The full documentation for the Soviet case is found in Evangelista, *Innovation and the Arms Race*, chap. 5.

bombs. . . . [We] wanted to know in what direction tactical thought would go, what was waiting for us in this regard in the near future. However, then, in 1946, no one could satisfy our natural curiosity.”<sup>66</sup> Until Stalin’s death in 1953, even Soviet military planners were restricted in their ability to explore the “revolution in military affairs” that nuclear weapons had wrought.<sup>67</sup>

*Stage two: preparatory measures (1950–52).* During the late 1940s and early 1950s, the technical antecedents for the future development of tactical nuclear weapons were put in place. Soviet physicists had mastered the technology of atomic (fission) weapons and were working on development of thermonuclear (fusion) ones. Yet Soviet military doctrine did not encompass battlefield use of nuclear weapons, and the physicists were not encouraged to make independent contributions to Soviet strategy. At a comparable stage in the American case, physicists such as Oppenheimer pushed for development of small-yield, lightweight, tactical nuclear weapons as an alternative to thermonuclear or hydrogen bombs and attempted to recruit allies in order to attract political support for their cause. The Soviet scientists, by contrast, appear to have concentrated mainly on developing an H-bomb as quickly as possible.<sup>68</sup> Again, possibilities for innovation existed, but high-level priorities ruled it out. The clear priority granted to strategic weapons, in combination with other characteristics of the Soviet system (such as compartmentalization and secrecy in the research and development programs) did not allow for developments comparable to the American ones.

Despite the priority given to strategic nuclear weapons, the Soviet military did give some preliminary consideration during this stage to the effects of nuclear weapons against troops. In 1951, the Soviet General Staff ordered General Ivan E. Petrov, commander of the Turkestan military district, to “prepare a plan of a large exercise in which questions connected with the use of nuclear weapons would be worked out.” The intention of the exercise was to conduct troop maneuvers under conditions resembling nuclear attack. Owing to the fact that information on nuclear weapons was so tightly held and scarce—indeed, by this time, the Soviets had only tested one atomic bomb—Petrov was unable to carry out his assignment. He appealed to the chief of the General Staff “to help in developing the plan and to send him those who knew the details of the new weaponry and could suggest in which

66. Vladimir Lavrinenkov, *Bez voiny* (Without war) (Kiev: Politizdat Ukrainy, 1982), pp. 66–71 and 141–42.

67. V. Ivanov, “Development of Soviet Operational Art,” *Voennaia Mysl'* (Military thought) 3 (March 1967), p. 11; and S. Kozlov, “The Development of Soviet Military Science after World War II,” *Voennaia Mysl'* 2 (February 1964), p. 33. Both articles are translations by the Foreign Broadcast Information Service (FBIS).

68. V. Gubarev, “Fizika—eto moia zhizn'” (Physics is my life), interview with Iu. Khariton in *Pravda*, 20 February 1984; and P. T. Astashenkov, *Podvig Akademika Kurchatova: Tvortsy nauki i tekhniki* (The accomplishment of Academician Kurchatov: Creators of science and technology) (Moscow: Znanie, 1979), p. 104.

direction the planning of the exercises should be carried out.” An exercise was eventually conducted, but it did not apparently include any physical simulation of atomic effects.<sup>69</sup> More extensive exercises, including one involving the actual detonation of a nuclear device, were not carried out until after evidence of comparable American developments appeared.

*Stage three: high-level response (1953–57).* The development of Soviet tactical nuclear weapons appears to have been initiated at the top of the political system. It seems clear that two related American initiatives galvanized the Soviet political and military leadership to confront the issue of tactical nuclear warfare. The first was the beginning of widescale deployment of U.S. tactical nuclear systems into Europe during 1953.<sup>70</sup> The second was the American decision, taken in the fall of that year, that “in the event of hostilities, the United States will consider nuclear weapons to be as available for use as other munitions.”<sup>71</sup> The decision was presented to North Atlantic Treaty Organization (NATO) allies in a restricted session of the North Atlantic Council in Paris in mid-December 1953.<sup>72</sup> It received broader public attention when Secretary of State John Foster Dulles made a speech to the Council on Foreign Relations announcing the new policy of “massive retaliation.”

The Soviets did not at this point simply imitate American weapons and strategy. Their response was twofold. In the short term, they restructured their air defense forces to respond to nuclear attack, and they began instructing soldiers on the effects of nuclear weapons.<sup>73</sup> These developments were facilitated by the death of Stalin in March 1953 and the subsequent lifting of nuclear censorship. The Soviet leaders also initiated programs to develop tactical nuclear weapons and delivery vehicles to carry them. At this stage, they hedged their bets by ordering development of all the systems that they knew the Americans were working on—missiles, artillery, and aircraft. In the case of aircraft, this entailed reopening a design bureau (which

69. Vladimir Karpov, *Polkovodets* (Commander) (Moscow: Sovetskii pisatel', 1985), p. 522–24. The author was one of six officers from the General Staff who participated in the exercise.

70. Some systems had already been secretly deployed in Britain and with naval forces in the Mediterranean in the spring of 1952, but public attention was not drawn to these developments until the following year. See the discussion in Evangelista, *Innovation and the Arms Race*, chap. 4.

71. The statement was approved as national policy on 30 October 1953. JCS 2101/113, 9 December 1953, with decision, 10 December 1953, CCS 381 U.S. (1-31-50) Section 31, Records of the Joint Chiefs of Staff, National Archives, quoted in Rosenberg, “The Origins of Overkill,” p. 31.

72. See the notes prepared by Livingston Merchant, Assistant Secretary for European Affairs, 16 December 1953, in *Foreign Relations of the United States, 1952–1954*, vol. 5, Western European Security, Part I, pp. 476–79.

73. Matthew Evangelista, “The Evolution of the Soviet Tactical Air Forces,” *Soviet Armed Forces Review Annual* 7 (1982–1983), pp. 451–79; M. A. Gareev, *Takticheskie ucheniia i manevry* (Tactical exercises and maneuvers) (Moscow: Voenizdat, 1977), pp. 171–72 and 189–90; and Lavrinenkov, *Bez voyny*, p. 203.

Stalin had previously shut down) in order to produce a tactical fighter-bomber to deliver nuclear weapons.<sup>74</sup> Such high-level intervention constitutes an important contrast with the American weapons-procurement process, in which pressure often comes from the weapons manufacturers themselves in the form of the “follow-on imperative.”<sup>75</sup>

*Stage four: mobilization (1958–59).* During the period 1958–59, the development of tactical nuclear weapons achieved a somewhat higher priority as Soviet political and military leaders revised their views on the nature of a future war. They recognized that nuclear weapons would play an important role in a major war between the United States and the Soviet Union, and they debated at the highest levels the appropriate choice of weapon systems; in particular, they debated which of the nuclear delivery vehicles developed during the previous stage should be produced and in what quantity.

At this stage, Nikita Khrushchev and his colleagues made decisions to emphasize production of missiles for delivery of tactical nuclear weapons and to halt production of the nuclear artillery piece or “atomic cannon” developed during the previous period. The procurement of aircraft was also cut back dramatically.<sup>76</sup> The nature of the strong Soviet state allowed the leadership to cancel relatively ineffective or redundant weapons, whereas the weak American state has less success in doing so.

*Stage five: mass production (1960–64).* The fifth stage in the process of Soviet weapons innovation typically consists of consolidation of a change in priorities, high-level announcements acknowledging the change, mass production of the relevant new weaponry, and widescale implementation of the new priorities. Beginning in 1960, changes in Soviet military priorities were announced by the top political and military figures.<sup>77</sup> A future world war would inevitably be a nuclear-rocket war. From this point, the production of missiles of all ranges was accelerated, and the development of aircraft was curtailed. The structure and operational practices of the Soviet forces during this time were influenced by organizational and (especially) traditional military factors, yet the top political leadership retained the ability to intervene to enforce its will. This was evident in the founding of the Strategic Rocket Forces and in the allocation of operational-tactical missiles at the expense of artillery, tank, and air forces. The strong, centralized state,

74. *Aviatsiia i kosmonavtika SSSR* (Aviation and cosmonautics USSR) (Moscow: Voenizdat, 1968), p. 243; and Jean Alexander, *Russian Aircraft since 1940* (London: Putnam, 1975), pp. 340–41.

75. The term is from Kurth, “A Widening Gyre,” pp. 390–92.

76. Transcript of Khrushchev’s tape-recorded reminiscences, Harriman Institute Library, Columbia University, p. 403.

77. See, for example, Khrushchev’s speech to the Supreme Soviet, printed in *Pravda*, 15 January 1960.

represented in the military sphere by the General Staff, imposed its will on the services in a way that the fragmented system of the U.S. Joint Chiefs of Staff could not hope to do.<sup>78</sup>

*Summary of the five stages of Soviet weapons innovation.* The Soviet process of weapons innovation is a “top-down” one. The main impetus to innovation comes from the political and military leadership, generally in response to developments abroad. Unlike the American system, in which scientists and weapons designers act as policy entrepreneurs and promote their favored weapons, the Soviet system stifles such low-level initiative. The balance of internal and external factors in the American system thus differs from that in the Soviet system. As David Holloway described Soviet military research and development (R&D), it “can be seen as the effort of a basically non-innovative system to cope with revolutionary technological change, which has been generated primarily by the Soviet Union’s potential enemies.” Consistent with the case presented here are his findings that “major innovation decisions cannot easily be handled within the standard operating procedures of the military R&D system, and require intervention from the top to authorize new funding and new institutional arrangements.”<sup>79</sup>

By contrast, as the American case demonstrated, the top leadership (in particular, the President) is often unaware of an innovation until it is quite far along in its development. This is true even of the Strategic Defense Initiative, if progress is measured in terms of money spent and not according to technical success (of which little is anticipated).<sup>80</sup> In the American case, external factors tend to come into play mainly as “windows” that help entrepreneurs promote systems they have long advocated, rather than as an impetus to an innovation. In short, the Soviet and American processes of

78. See Lowi’s discussion of the Joint Chiefs of Staff and the Defense Department in “Making Democracy Safe for the World.”

79. David Holloway, *The Soviet Union and the Arms Race* (New Haven, Conn.: Yale University Press, 1983), pp. 148–49.

80. Pressure for strategic defenses had been building up “from the bottom” for many years before Ronald Reagan’s speech of 23 March 1983. By March 1982, potential investors in military industries were being informed that “the ballistic missile defense (BMD) program is a major national priority,” whose funding had increased by 57 percent over the previous year and was scheduled to double in the next. See *Investing in the Defense Industry: The Defense Budget*, Research Report Defense Series no. 17, First Albany Corporation, Albany, N.Y., March 1982, p. 10. For press accounts, see Richard Halloran, “U.S. to Increase Military Funds for Space Uses,” *The New York Times*, 29 September 1982; and Philip M. Boffey, “Pressures Are Increasing for Arms Race in Space,” *The New York Times*, 18 October 1982, one of a three-part series of articles. The initiative for “Star Wars” came mainly from physicists and weapons designers associated with government laboratories—in this case, the Lawrence Livermore nuclear weapons laboratory in California. See Greb, “Science Advice to Presidents”; and Broad, *Star Warriors*.

weapons innovation are quite different, and, in some respects, are the opposite of each other.<sup>81</sup>

### *Alternative explanations*

I have argued that the case of tactical nuclear weapons illustrates the differences in policy processes between the United States and the Soviet Union in the issue-area of weapons innovation. A few objections to this argument could be raised. The first possible objection is that the Soviet development of tactical nuclear weapons does not constitute a typical example of the "top-down" approach to policy initiation in the Soviet Union but, rather, that it is an artifact with the stamp of Stalin's personality. Proponents of this view might argue that if it were not for Stalin's peculiar policy of nuclear censorship, the technocratic and military elements of the Soviet Union would have pushed for development of tactical nuclear weapons as their U.S. counterparts did. The problem with an argument that blames Stalin for lack of innovation is that it fails to account for the times Stalin encouraged innovation, despite his policy of nuclear secrecy. When faced with the threat of U.S. atomic bombers on bases surrounding the Soviet Union in the late 1940s, for example, Stalin ordered a drastic reorganization of Soviet air defense assets. Breaking with the traditional emphasis on air power as support for ground forces, Stalin in 1948 created the air defense forces (the PVO) as a separate service, second only to the army in importance. The PVO received priority in allocation of new jet fighter aircraft.<sup>82</sup> In a similar fashion, Stalin organized a major effort to respond to U.S. possession of atomic weapons by developing Soviet atomic and hydrogen bombs.<sup>83</sup> In both cases, the perception of foreign threat produced a "top-down" effort to innovate. The same holds true for the case of tactical nuclear weapons. They were developed not because Stalin was no longer around to stem the tide of low-level initiative, but because the United States began deploying its own tactical nuclear weapons in Europe. This pattern of Soviet innovation holds for the post-Stalin period as well.<sup>84</sup>

The second possible objection would hold that in studying the development of U.S. and Soviet tactical nuclear weapons, we are not actually observing the same issue-area for each country. In the U.S. case, we observe weapons

81. For other studies that contrast U.S. and Soviet innovation in a similar fashion, see David Holloway, "Innovation in the Defense Sector," in Ronald Amann and Julian Cooper, eds., *Industrial Innovation in the Soviet Union* (New Haven, Conn.: Yale University Press, 1982), chap. 7; Mary Kaldor, "Military R&D: Cause or Consequence of the Arms Race?" *International Social Science Journal* 35 (February 1983), pp. 25-46; and Mary Kaldor, *The Baroque Arsenal* (New York: Hill & Wang, 1981).

82. Evangelista, "Evolution of the Soviet Tactical Air Forces."

83. Holloway, *Soviet Union and the Arms Race*, chap. 2.

84. Evangelista, *Innovation and the Arms Race*, chap. 6.

innovation; but in the Soviet case, we observe *reaction* to an existing innovation. The process of innovation is naturally a “bottom-up” one, according to this argument, whereas the process of reacting is “top-down,” regardless of whether the actor is the United States or the Soviet Union. In one respect, this objection has some merit. Indeed, part of what a domestic structural approach explains, in the tradition of Gerschenkron and Moore, is why some states lag behind and how the domestic structures of the laggards evolve in order for those states to compete with the leaders in the international system. In that sense, we can speak of innovations and reactions. The domestic structural approach helps explain both why the Soviets lag in weapons innovation and how they catch up. In fact, however, even in those rare cases when the Soviet Union led in a weapons innovation and the United States followed, the Soviets still pursued a “top-down” approach and the Americans a “bottom-up” one. These policy processes were not associated with follower versus leader but, instead, with the different domestic structures of the Soviet Union and the United States.<sup>85</sup> In the case, for example, of the Soviet antiballistic missile system, deployed around Moscow several years before a comparable U.S. system was fielded, the initiative came from the top. As Nikita Khrushchev described, “When we told the scientists and engineers to create intercontinental rockets, we immediately told another group of scientists and engineers to work out means to combat these rockets.”<sup>86</sup> The first Soviet intercontinental ballistic missile (ICBM) was launched in 1957, a year before its U.S. counterpart. All the same, the Soviet innovation was hardly a “bottom-up” process. It was a high-level effort from the start.<sup>87</sup> By contrast, the U.S. response to the Soviet ICBM did not diverge greatly from the typical American weapons innovation process. Even though the missile program received high-level attention after 1957, there was still considerable scope for bureaucratic influence and entrepreneurial efforts on behalf of particular programs.<sup>88</sup>

A final objection that must be considered is a methodological one. Is it reasonable to draw conclusions about issue-area versus domestic structural approaches after looking at only one issue-area, in this case weapons in-

85. For a discussion of some of these cases, see Evangelista, *Innovation and the Arms Race*, pp. 240–45.

86. Khrushchev’s remarks were made in an interview with Arthur Sulzberger, originally published in *The New York Times*, 8 September 1961, and reprinted in *Izvestiia*, 9 September 1961, from which he is quoted here. See the discussion in Evangelista, *Innovation and the Arms Race*.

87. V. Tolubko, *Nedelin: Pervyi glavkom strategicheskikh* (Nedelin: First commander-in-chief of the strategic [rocket forces]) (Moscow: Molodaia Gvardiia, 1979), especially pp. 174–88. For an extensive discussion, see David Holloway, “Military Technology,” in Ronald Amann, Julian Cooper, and R. W. Davies, eds., *The Technological Level of Soviet Industry* (New Haven, Conn.: Yale University Press, 1977), pp. 407–89; and Holloway, “Innovation in the Defense Sector.”

88. Michael H. Armacost, *The Politics of Weapons Innovation: The Thor-Jupiter Controversy* (New York: Columbia University Press, 1969); and Edmund Beard, *Developing the ICBM: A Study in Bureaucratic Politics* (New York: Columbia University Press, 1976).

novation? After all, Zimmerman's challenge was to examine policy processes across *several* issue-areas within a given state and compare them to those of another state.<sup>89</sup> On the other hand, the findings of my case studies on weapons innovation—in particular, the “bottom-up” and “top-down” distinctions—are consistent with those of other students of comparative U.S.–Soviet policy investigating other issue-areas.<sup>90</sup> Finally, the issue-area of weapons procurement is one that both Zimmerman and Potter themselves proposed as likely to support an issue-area approach.<sup>91</sup> Thus, it could be considered a hard case for the domestic structural approach. One should therefore be able to draw at least some tentative conclusions about the relative merits of the two approaches.

### Good news and bad news for theory

The cases of Soviet and American weapons innovation suggest a number of observations about the debate between the issue-area and domestic structural approaches to comparative foreign policy. The conclusions presented here have something to say about the relevance of domestic structures to the understanding of security policy and about the comparability of Soviet and American policy processes.

The issue-area school is right to emphasize the importance of domestic factors in the formulation of foreign policy. Lowi, Zimmerman, and Potter, in particular, seem justified in calling attention to the similarity between categories of domestic and foreign policy processes. By contrast, those students of international political economy who favor domestic structural approaches seem mistaken in their inclination to put security policy in a separate class where societal forces have no impact. Few would argue with Krasner's contention that “all groups in society would support the preservation of territorial and political integrity.”<sup>92</sup> But neither would anyone argue that “all groups in society support economic prosperity” as a way to discount the effect of domestic factors on foreign economic policy: students of international political economy explore areas of policy debate and choice. By the same token, students of international security are interested in the policy issues over which there is considerable controversy, such as the appropriate grand strategy for a country to pursue, which weapons should be procured, and so forth. And as Lowi and others suggested, the fragmented, decentralized nature of the American system gives societal and bureaucratic forces

89. Zimmerman, “Issue Area and Foreign-Policy Process,” p. 1212.

90. Most notably, the findings are consistent with those of Brzezinski and Huntington in *Political Power: USA/USSR*.

91. Zimmerman, “Issue Area and Foreign-Policy Process,” p. 1211; and Potter, “The Study of Soviet Decisionmaking,” pp. 298–305.

92. Krasner, *Defending the National Interest*, p. 329.



considerable influence over the outcomes of these policy debates. The case studies of weapons innovation indicate that a country's domestic structure does help determine the process by which new weapons are developed.

Those proponents of the issue-area approach who expect the Soviet process of innovation to be similar to the American one are not supported by the evidence summarized here. Zimmerman evidently anticipated a negative answer when he asked in 1973: "Do the political structure and political culture of the Soviet Union so greatly shape the nature of policy formation as to preclude the value of issue-related hypotheses in the Soviet case?"<sup>93</sup> He expected that similar issues would involve similar policy processes in both the United States and the Soviet Union. The case studies of weapons innovation find, however, very different Soviet and American processes. This conclusion at first glance seems like a step backward on the road to a general theory of foreign policy, because it implies that efforts to generalize mainly on the basis of issue-area will prove unsuccessful.

The good news is that generalization may be possible on the basis of domestic structures. The case studies suggest that advocates of the domestic structural approach have been too timid in this regard, by excluding national security as an issue-area and neglecting or isolating states of the Soviet type. It may be possible to envision countries along a spectrum in which the differences in domestic structures account for different outcomes in security policy.<sup>94</sup> Adopting a domestic structural approach may also help bring the Soviet Union back into the study of comparative politics in other issue-areas besides security policy. A comparative study of U.S. and Soviet policy in the area of computer technology, for example, could find that the difference between the decentralized American system of technological entrepreneurs and venture capitalists on the one hand and the Soviet system of centralized, "top-down" administration on the other would account for important differences in outcomes, such as level of technology and frequency of innovation.<sup>95</sup> It is worth recalling James Rosenau's decision to exclude consideration of "authoritarian" systems from his 1967 article, "Foreign Policy as an Issue-Area," on the basis that "they are marked by a high concentration of authority and responsibility in both the foreign and domestic areas"

93. Zimmerman, "Issue Area and Foreign-Policy Process," p. 1211.

94. For some evidence on this score, see Athanassios Platias, "High Politics in Small Countries," Ph.D. diss., Cornell University, 1986.

95. The conclusions of a number of comparative studies would seem compatible with such an analysis. See, for example, the contributions to Amann, Cooper, and Davies, *The Technological Level of Soviet Industry*; contributions to Amann and Cooper, *Industrial Innovation in the Soviet Union*; Raymond Bentley, *Technological Change in the German Democratic Republic* (Boulder, Colo.: Westview, 1984), especially his concluding comparisons between East and West Germany on the one hand and the German Democratic Republic and the Soviet Union on the other, chap. 8; and Jonathan D. Pollack, *The R&D Process and Technological Innovation in the Chinese Industrial System*, Rand Corporation Report R-3284, Santa Monica, Calif., May 1985.

and that “hierarchical policy-making prevails in all walks of life.”<sup>96</sup> Including states with such characteristics into comparative studies could contribute to the development of general theories.

Undoubtedly, one will find important differences in policy process between issue-areas in a single country. The domestic structural approach will not magically restore the parsimony that one loses in rejecting general theories of the sort proposed by Zimmerman. Those intent on developing a general theory of comparative foreign policy may unfortunately have to return to a set of interacting variables as complicated as the one proposed by Rosenau in 1966.<sup>97</sup> The rest of us will continue to employ explanatory tools such as analysis of domestic structures to investigate those issues of world politics that concern us.

96. These remarks are found in Rosenau, *Domestic Sources of Foreign Policy*, p. 43, fn. 50.

97. Rosenau, “Pre-theories and Theories of Foreign Policy.”