Current thinking about nonproliferation issues tends to deal with nuclear weapons and other weapons of mass destruction in a political vacuum, choosing to see these issues in a security-oriented context. This perspective reduces the complex rhythms and multiple voices of the process of proliferation to a single element—security. Just as a string quintet requires a viola, sometimes even two, so security clearly is an important element of understanding and dealing with proliferation. Yet the full score for proliferation extends beyond any single voice or any single set of issues. I argue in this essay that the policy instruments available for dealing with proliferation need to expand beyond security-centered measures and need to work in better harmony with their domestic political foundations, and that theoretical and policy understandings of proliferation need to become more explicitly political.

Too often, U.S. government policy and the recommendations of nonproliferation analysts focus on a narrow set of proliferation causes and nonproliferation options. Countries are usually assumed to acquire weapons of mass destructions or ballistic missiles because they see them as necessary for their security. The most important factors in determining the course of proliferation therefore tend to be identified as external security threats and foreign technical assistance. Other causes or processes are addressed only cursorily or lumped into the residual category of status and prestige, while basic questions about the “security” issue—what is defined as security, what is defined as necessary for security, and how those definitions come to be accepted—frequently escape focused attention.

Similarly, policy recommendations tend to rehearse the same tunes: export controls, arms control, and redressing security concerns. These old favorites play well in various capitals around the world, perhaps because they are both sensible and comfortably familiar. But they are also insufficient. The point here is not only that the nonproliferation community—both theorists and practitioners—can reach farther afield in devising policy options. We also need to recognize that nuclear weapons and other weapons of mass destruction do not spring into being in isolation from the rest of society. Our analyses and recommendations need to recognize instead how the process of proliferation is intimately connected to broader political and international issues.

This essay first examines the surprising diversity of causes and motivations that underlies the processes of development, acquisition, deployment, and retention of nuclear weapons and other weapons of mass destruction, as well as ballistic missiles. It then turns to the expanded set of nonproliferation policy options and political processes that, from the U.S. perspective, becomes available when the spotlight is turned away from traditional security-based arms control and export control policies. This essay also tries to draw new implications and policy recommendations from the reality that nonproliferation policy formation in the United States is just as diverse and politi-
cal as proliferation processes elsewhere. It concludes by addressing the need for new theoretical perspectives that can help construct a broader and more political view of proliferation.

ARE NUCLEAR WEAPONS SPECIAL?

Nuclear weapons are special. Anything that can destroy entire cities in a microsecond merits distinctive consideration. Ballistic missiles and chemical and biological weapons share in a limited way the impression of awesome destructive power. But the process of proliferation is not special. It is the same as any other social or political process. Decisionmaking about developing a technological infrastructure, about acquiring specific numbers and configurations of weapons, or about deploying or retaining those weapons, all occurs with the same constraints, the same historical contingencies, and the same diversity of considerations as decisionmaking about any other political issue. What we, as analysts, know about the political processes surrounding elections, welfare reform, or industrial policy also applies to proliferation and to nonproliferation policy. This simple truism has surprisingly deep implications for our understanding of proliferation and our choices about how to deal with it.

One might be tempted to think that nuclear weapons or other proliferation concerns are exempt from the usual political processes or that their patterns of internal decisionmaking are distinct from other political issues. Perhaps in the 1940s and 1950s, the purveyors of nuclear weapons and ballistic missiles could successfully cling to an aura of absolute—even demonic—power and thus brush off any interference from political groups outside the appointed priesthoods (such as technologists or the military). The bureaucratic weapons of national security, military prerogatives, or a technological smokescreen could also be useful in fending off political incursions. Even during that period, the priesthoods were hardly apolitical, fighting among themselves over agendas ranging from manned bombers or particle accelerators to personal ambition.

By the 1960s, and certainly today, the post-Hiroshima aura surrounding nuclear weapons has long since faded. The many-decades-old technology for nuclear weapons, ballistic missiles, and chemical weapons is widespread, almost commonplace—passed though clearly not obsolete. The claims that arguments of national security could once make on authority, resources, and secrecy can now often be made with equal force by other issues, such as economic growth in China, technological development and self-reliance in India, or trade policy in Brazil. Assumptions left over from the national security state of 1950’s America do not apply universally.

Nor does the military imprimatur insulate proliferation programs politically. Uniformed services are frequently out of the loop in nuclear weapons decisionmaking. The United States explicitly set up the civilian Atomic Energy Commission in order to lessen military influence on nuclear decisionmaking; Stalin kept the early Soviet programs under tight personal control and the warheads under even tighter KGB control. Similarly today, in Ukraine, India, or perhaps even Iraq, uniforms are a rare sight at bureaucratic nuclear weapons meetings. It is difficult to find a case where that special aura of authority that comes with a military uniform had a significant impact on the original development of nuclear weapons.

In sum, neither new technology nor totemic implications, neither national security nor military authority, can provide a basis for thinking that nuclear weapons and other proliferation concerns are subject to a unique set of political processes. Yes, because technological development is frequently an important aspect of proliferation, scientists and engineers may play a more prominent role than they do in welfare reform. Yes, because of the international implications, the foreign policy elite may be more involved than it is for campaign financing laws. But these groups, along with all the others involved in activities of proliferation concern, are still subject to the competition, the ideological shifts, the quest for allies, the publicity consciousness, and all the diverse political processes that characterize any other social activity in the modern world.

THE CAUSES OF PROLIFERATION: LOOKING FOR POLITICAL ALLIANCES

One fruitful approach for seeing the diversity and the politics inherent in proliferation processes is to view the development of nuclear weapons or other weapons of mass destruction as the process of building an alliance. Nuclear and missile system-builders, especially in developing countries, face limits on all sorts of resources—money, political authority and consensus, laboratory quality reagents, access to imports, and so on. To gain access to such resources, nuclear weapons advocates need to recruit an array of allies: the security
elite, the military R&D establishment, commercial subcontractors, or the press. Constructing the relatively simple artifacts of nuclear weapons or ballistic missiles thus requires using these allies to recruit and fix these scarce resources in a stable technological system.6

These allies not only add specific capabilities needed to manufacture end-products such as nuclear weapons and ballistic missiles, they also sustain and support the growth of the whole system. The system must collect momentum and resources into a big coalition, or such weapons will never be produced. The diverse communities and interests involved in developing weapons of mass destruction (or any other large technological system) will never monolithically decide to construct them, with the technical processes then obediently following in the wake of the political decision.7 Instead, complex systems start small and build painstakingly on existing resources. If successful, a growing technological system recruits both “social” and “technical” allies along the way.8

Traditionally, proliferation analysts have focused on just two allies that have moved technological systems along the development path—external security threats and foreign technical assistance. We can see clearly that country A is building chemical weapons, for example, because it feels threatened by country B. We can also identify when country X finds it easier to develop a given capability because of the availability of key components internationally. But other allies also play vital roles, often in highly context-dependent ways.

In many older programs of proliferation concern, the civilian nuclear power industry was a crucial ally in building up the technological, industrial, and political infrastructure that would be needed for a nuclear weapons program. The premise of the entire International Atomic Energy Agency safeguards program is that civilian programs are an ally worth paying attention to (although the worldwide decline of nuclear power may mean that the relationship between weapons and power programs seen in India, Argentina, South Korea, and elsewhere will not be repeated in the future). Similarly, space programs have given an important or imputed boost to ballistic missile programs in a number of cases.9

We can also examine more carefully how the usual suspects from the bureaucratic politics literature, such as budget battles or personal ambition, operate in the proliferation context. Some argue that budgetary outcomes change with an influx of money, especially hard currency, so that oil revenues, for example, can sometimes be the most important ally in the progression of an arms race.10 More generally, scientific and engineering communities are usually key actors in the development of the large technological systems that produce nuclear weapons or ballistic missiles. In understanding how these communities form alliances with weapons programs, an analyst could look for how they value original research and individual accomplishment, how they construct the boundary between the technical and the political, and how they do and do not identify as part of an international community of science.11

"Rollback" (where countries choose to abandon already existing and significant capabilities) provides striking illustrations of the need to look beyond security threats and technical assistance to the same sorts of factors that would explain dropping a protectionist trade policy or ending human rights abuses. In the Brazilian case, the decisions to reverse the ballistic missile and nuclear weapons programs were intimately connected with the opening to international trade and investment. In South Africa, an existing nuclear stockpile was physically dismantled in parallel with the dismantling of apartheid. Faced with an impending regime change and seeing opportunities to end international sanctions and reclaim civilian nuclear export markets, South Africans increasingly viewed their nuclear weapons as an impediment rather than an aid to their objectives, which now included political and economic reintegration into the international community.12 For Kazakhstan, security assurances were an issue that needed to be resolved in the process of disposing of nuclear weapons, but they were not the driving force in the arguments of those supporting or opposing retaining the republic’s nuclear arsenal. Instead, cost and technical questions, the nuclear legacy of Semipalatinsk, nationhood, legitimacy, and acceptance into the international political and economic mainstream all figured prominently.13

Odd historical contingencies also help account for support for nuclear programs. In India, the manufacture of fertilizer and a drive for increased agricultural production led nuclear technology into a strong, though short-lived, alliance with self-styled "agro-industrial complexes."14 In Brazil, the distance from the largest rivers to the largest cities was an ally for the nuclear program. With transmission losses so high from hydroelectric power, some Brazilians found it tempting to transfer the power by other means: using an electricity-intensive method of uranium enrichment near
the dams, and building indigenously-fueled enriched uranium reactors near the cities.\textsuperscript{15} Political alliances can be similarly contingent, as in the late 1950s when a narrow majority for the ruling coalition in the Swedish parliament (at times as small as a single vote) made it imperative to satisfy all wings of the major coalition partner, the Social Democratic Party. It is possible that this dynamic encouraged continued nuclear weapons development to a quite advanced state, until it finally shifted with the elections of 1958.\textsuperscript{16}

More pressingly, the economic distress and potential social collapse of the former Soviet republics have become the leading proliferation concerns in the world. Yet because these problems do not fall under the rubric of security or technology, all of our traditional conceptions about proliferation provide only ad hoc and intuitive ideas of how to analyze and deal with them.

Even when access to technology or security threats are present, those allies are rarely sufficient to explain the choices observed. For example, one recent analysis of chemical weapons and ballistic missile proliferation advocates an emphasis on the "demand side" of proliferation, with international conflict as the underlying cause. Yet the same analysis notes that chemical weapons are "morally dubious and of infamous reputation," and that missiles are "symbols of high technological achievement."\textsuperscript{17} I would argue that these factors are indeed important. The high-tech aura is an important ally for missile advocates in developing countries, and moral squeamishness can inhibit potential allies from joining the cause of chemical weapons. But a narrow focus on security issues and technological capabilities excludes their explicit consideration.

Similarly, security considerations may indeed motivate the pursuit of nuclear weapons because they are seen as the ultimate purveyor of international power or as the token of great power status. But this formulation begs the question of how nuclear weapons come to be seen in this way. Preliminary investigation shows that the highly political processes of international diffusion and learning of ideas, norms, and cause-and-effect stories can account for shared--and crucial--understandings about the need, function, or desirability of nuclear weapons. Though international in origin, these shared understandings about nuclear weapons and security are then translated into the domestic political arena.\textsuperscript{18}

For example, in the United States during the Cold War and in Pakistan more recently, support for nuclear weapons programs became a litmus test for national politicians. Candidates and government officials had to protect themselves by aggressively supporting such programs and vigorously attacking anyone who did not support them.\textsuperscript{19} Nuclear weapons or ballistic missile system-builders trying to win more allies for their systems know how to exploit this dynamic and all the others that lead to taken-for-granted assumptions about nuclear weapons. Nonproliferation analysts trying to follow those system-builders could learn about the precisely the same dynamics by examining the international diffusion of everything from science boards and air forces to flags and social security systems.\textsuperscript{20}

Finally, and perhaps most importantly, both the causes of proliferation and the international politics of nonproliferation are thoroughly wrapped up in the tangle of political issues surrounding North-South trade, international equity, and economic and technological development, a tangle which I arbitrarily group under the rubric of "North-South issues."

The global debates over nonproliferation regimes such as the Non-Proliferation Treaty (NPT), the Missile Technology Control Regime (MTCR), or the Nuclear Suppliers Group (NSG) are manifestly about accusations of discrimination, supplier cartels, maintaining underdevelopment through technology denial, and so on.

The same arguments find their reflection in proliferants’ domestic debates over saving money on high-tech imports, using nuclear, missile, and other defense technologies as "leading sectors" to develop upstream and downstream industries, and breaking into supplier cartels as second-tier suppliers of space launch services, ballistic missiles, and nuclear technology.\textsuperscript{21}

More broadly, the drive for some form of technological autonomy supported the growth of many countries’ nuclear systems. Wide-ranging political, economic, and industrial interests support programs (such as promoting self-reliance or fighting "brain drain") that enhance indigenous capabilities for innovating and adapting technologies. Nuclear technology has been a prime conduit for such policies.\textsuperscript{22}

In sum, even when nuclear weapons or other weapons programs benefit from the support of security- and technology-centered allies, they do not avoid interacting with a multitude of broadly political issues. What remains is for us to integrate these factors into our understanding of proliferation and, more importantly, into nonproliferation policy.
POLICY OPTIONS: BEYOND EXPORT CONTROLS, ARMS CONTROL, SECURITY

Traditional nonproliferation measures cover a relatively narrow band of policy options: export controls, arms control, and redressing security concerns. Export controls range from broad international regimes to barely formal supplier cartels (including the Chemical Weapons Convention (CWC), the NPT’s prohibition on transferring nuclear weapons, the NSG, and the MTCR). They share the assumption that access to foreign technology is a key ally for potential proliferants’ programs, usually ignoring North-South issues in the process. Export controls are an important (if sometimes counterproductive) policy tool, but as argued above they cover only a portion of the broader picture.

Arms control measures directly target weapons, weapons components (such as fissile materials), and weapons testing and operations (e.g., the NPT, the Comprehensive Test Ban (CTB), a fissile material production cut-off, the CWC, a global treaty on Intermediate-range Nuclear Forces (INF), and so on). If implemented successfully, such measures can clearly have an important nonproliferation impact. But the State Department or Foreign Ministry is usually left to figure out how and why countries would be willing to sign on. For the most part, such measures are the end game of nonproliferation, marking the success of other policies or an a priori conjunction of objectives among parties to an agreement. If North Korea or France chooses full NPT compliance, that choice follows many actions by many countries. The NPT itself does not somehow inspire the compliance.

Finally, the last 20 years have seen an increasing (and laudable) emphasis on addressing underlying security concerns as part of the battle against proliferation. Transparency, confidence- and security-building measures, conventional arms control, and positive and negative security assurances have all been proposed and sometimes implemented in a nonproliferation context. Yet, as discussed above, such security concerns are not the only reason countries develop or acquire weapons of mass destruction or ballistic missiles.

Unfortunately, these three sets of nonproliferation policies span the usual repertoire. In addition, carrots and sticks unrelated to proliferation are sought to pressure a given country into undertaking specific nonproliferation actions. Recently, Clinton administration officials have made encouraging statements that they “intend to weave it [nonproliferation] more deeply into the fabric of all of our relationships with the world’s nations and institutions,” and will seek a “new consensus...to promote effective non-proliferation efforts and integrate our non-proliferation and economic goals.” The administration is also seeking to “expand and strengthen the world’s communities of market-based democracies” and to “remove outdated controls that unfairly burden legitimate commerce and unduly restrain growth and opportunity all over the world.” However, other than relaxing specific export control regulations, such sentiments have not been developed into a recognizable policy. As Spurgeon Keeny notes, the few new initiatives “are too vague.”

In practice, U.S. policy does already include numerous elements that go beyond the traditional categories. An agreement to purchase highly enriched uranium (HEU) from dismantled Soviet weapons for blending into U.S. civilian reactor fuel has been reached and may soon be implemented. U.S. nuclear diplomacy with Ukraine has not been limited to traditional nonproliferation policies, centering on issues of national sovereignty and identity, economic aid, and fuel supplies. Also, in order to implement a cut-off of the production of weapons-usable fissile material, the Russian Ministry of Atomic Energy would have to shut down all plutonium production reactors, some of whose heat and steam are used for residential and industrial applications. Nonproliferation specialists in the U.S. Department of Energy now find themselves worrying about developing “combined heat and power stations based on aeroderivative gas turbines fueled by natural gas” to replace existing heat streams in Tomsk and to meet their nonproliferation objectives.

Similarly, dealing with the Indian missile program may require directing U.S. policies away from traditional security concerns. Technology development is a strong Indian motivation, so the United States could try to provide missing pieces needed to apply missile technology to civilian applications. The Indian missile program recently constructed a separate research facility to develop carbon-carbon composite materials in cooperation with Indian industry. Targeted assistance could conceivably incorporate those new materials into important Indian industries, such as transportation or consumer goods, so that the technology’s promoters would not have to rely on the missile programs in order to expand. Such assistance might dislodge that research establishment from the missile program’s orbit.
Does this mean we are doomed to devoting massive intelligence and research bureaus to devising custom proliferation policy packages for each country? Given enough resources, it would probably help. But more importantly, the nonproliferation community needs to integrate policy into the existing framework of broad economic and international relations, just as proliferation itself exists within such broader frameworks. For example, dual-use export controls are part of overall trade and technology issues, which are closer to the hearts of leaders in developing countries than nonproliferation issues. It is not that free trade, technology transfer, and economic development cannot be in conflict with nonproliferation goals. But if export controls and the nonproliferation regime as a whole are to be viable over the long term, then they must be dealt with as part of these larger issues. From NPT talks to the General Agreement on Tariffs and Trade (GATT), from most-favored nation (MFN) status for China to ensuring economic stability in Russia, the future of proliferation fundamentally depends on whether the international economic order moves toward interdependence or conflict and autarky. Efforts such as the NSG, while helpful, are holding actions that operate at the margins in comparison to the broader course of the politics of international economics.31

On a smaller scale, the South Korean case illustrates the effectiveness of a nonproliferation policy that is integrated into broader political issues. Besides wanting U.S. troops and nuclear weapons to remain on their soil, the South Koreans placed a high value on continued technology transfer and close, cooperative trade relations with the United States, to such an extent that they were unwilling to put those relations at risk by continuing their nuclear program in the 1970s.32 Today, U.S. officials are probably more worried about the Koreans dumping D-RAM chips than they are about the South Korea weapons programs, despite the extreme security-related provocations from the North. I suspect that this successful melding of economics, trade, politics, and proliferation is a replicable outcome.33

The economic politics of proliferation may be an important, generalizable phenomenon. Using theories from international political economy (IPE), Etel Solingen argues persuasively that key domestic constituencies become engaged in the nuclear debate when a society moves toward economic liberalization. With state-driven economic development, state-run firms and politicians who profit from state enterprises may dominate the domestic political landscape, while finding no compelling reasons to involve themselves in debates over weapons programs. With moves toward economic liberalization (which do not automatically imply political liberalization), a new coalition takes on greater domestic importance, including export-oriented firms, large banks, and industrial complexes, as well as internationally socialized professional groups.34 These groups’ extensive reliance on the global economy and on international exchange makes them vehemently opposed both to autarkic models of economic development and to proliferation policies that would under them from the international community. A restrained proliferation posture has the potential to secure for these constituencies economic, financial, and political benefits such as debt-relief, export markets, technology transfer, aid, and investment. In other words, cooperative regimes in the economic and security realms are mutually reinforcing, in both the international and the domestic realms.35

The course of the proliferation of nuclear weapons in particular also merges with the fate of the global nuclear network. In the past, nuclear power stations, superpower arsenals, and vast research establishments in the advanced industrialized countries testified to the possibility and importance of nuclear technology. When Indian scientists argue in the domestic political debate that electrical utilities should use nuclear power stations, that Indian universities should have departments of nuclear engineering and physics, or that nuclear weapons will deter Pakistani and Chinese attacks, they rely on the global nuclear network as the anchor for their still unstable systems. Conversely, if the U.S. nuclear power industry collapses, if leading universities brand nuclear research as passé, and if Soviet successor states give up their weapons, then would-be nuclear system-builders may feel themselves pulled down along with the rest of the global network.36

Is it possible to deal effectively with proliferation policy if it is intertwined in so many issues? One potential model is the Madrid process for the Middle East peace talks. These talks obviously would be doomed if they were only nonproliferation talks, consisting entirely of discussions about demilitarized zones, nuclear weapons, and perhaps new borders. Instead, a whole gamut of dauntingly intertwined issues has been incorporated into the multilateral component of these talks, from borders to CSBMs, from water rights to trade, from passports and refugees to regional security, and ultimately perhaps to nuclear weapons, chemical weapons,
and ballistic missiles. If Middle Eastern representatives find it conceptually and politically feasible to address a full spectrum of issues in face-to-face negotiations, then U.S. and other policymakers could also strive to consider the whole range of proliferation issues in a more unified, integrated fashion.

**POLICY FORMATION: INTEGRATING NONPROLIFERATION WITH DOMESTIC POLITICS IN THE UNITED STATES**

Of course a unified, integrated nonproliferation policy is not a realistic possibility. Domestic politics, and that peculiar blend of the international and the domestic known as alliance politics, preclude any textbook approaches to an issue as complex and diverse as nonproliferation. Numerous analysts recognize this constraint, but we do not generally go beyond deploring it. In some cases, the quest for jobs and export markets conflicts with a desire to limit dual-use exports, both domestically and alliance-wide. At other times, a military searching desperately for missions may latch on to an inflated proliferation threat, distorting policy priorities. Other foreign policy objectives may usurp center stage, such as human rights or lowering trade barriers.

Yet, the impediments of domestic politics sometimes result from the segregated, apolitical perspective on proliferation that I have been criticizing in this essay. Instead of decrying how domestic politics are “threatening to paralyze effective policy-making,” we could instead recognize both the necessity and the opportunities for integrating nonproliferation strategies back into the rest of foreign and domestic politics.

Better integration with domestic politics essentially means not having to fight against them so hard. For example, if the United States cares about high-tech and manufacturing jobs, then it should aim its nonproliferation policy at expanding those export markets. It should encourage technology transfer and development abroad (with exceptions for pariahs) in order to: reward reluctant regimes and domestic constituencies within those regimes; demonstrate the value of full membership in the international community; and wean potentially civilian technologies away from their dependence on allies like nuclear or military programs.

Similarly, if the military seizes the counterproliferation mission as justification for conventional forces and technological development, then let them run with it (though perhaps without much funding). A counterproliferation program implies (accurately or not) that the United States cannot be deterred by a few nuclear or chemical weapons or ballistic missiles in the hands of a proliferant. If actual military programs broadcast the message that proliferation cannot deter the U.S. "conventional deterrent" (what used to be known as the threat of intervention), they may thereby reduce the desirability of nuclear weapons and lower the incentives for their acquisition.

Finally, integrating nonproliferation policy with domestic politics means admitting that nuclear weapons, and certainly other weapons of mass destruction, are sometimes not the highest priority on the international and security agendas. In the process of admitting that heresy, we also move away from security as the best or only lens for seeing proliferation issues. We might then find opportunities to demonstrate that nuclear weapons are not the magic elixir of international power and that cooperation and participation as a full member of the international community are a potential proliferator’s best long-term security bet.

**THEORIES OF PROLIFERATION: BEYOND SECURITY, BEYOND REALISM**

A lack of richer theories of proliferation is one primary reason why our search for the causes of proliferation has been narrow, why the menu of policy options has been unnecessarily sparse, and why policy formation remains, in principle at least, isolated from domestic politics. The need for new and broader conceptions of security, of proliferation, and of international relations is beginning to be addressed. Many authors, such as Tad Homer-Dixon, Jessica Tuchman Mathews, and Joe Romm, alert us to security threats beyond military force, including environmental disasters, the demand for energy sources, drug trafficking, and the increasing competition over natural resources.

Yet, amidst the broader revolution in international relations theory, proliferation and security studies remain an oasis of realism, though the surrounding theoretical landscape is not a desert, but quite verdant. If, as I have argued in this brief essay, the process of proliferation is not special, then we can learn from an array of other theories of international and domestic politics. As discussed above, the nonproliferation community can learn what international political economy theories tells us about the evolution of economic and trade relations, about global alignments and North-South politics, and about how nonproliferation and other re-
regimes form. Sociological theories inform us about how ideas, norms, and organizations (such as the NPT or the "unconventional" nature of chemical weapons) become institutionalized, offering lessons about how domestic politics and the international environment interact. Similarly, our understanding of proliferation could extend to the interaction of domestic and international politics during negotiations or the role of internationalized professional communities in affecting policy outcomes. Even more synthetic and integrative approaches have already been applied to nuclear proliferation in particular, such as those focusing on myth-making and on the social construction of technology.

These theories, as with the earlier policy discussions, alert us to how much the process of proliferation intersects with other features of our political life, and how heterogeneous that process can be. An obvious implication is that we, as proliferation analysts, need to be not only theoretically limber, but as heterogeneous as our subject. In order to unravel the strands of the seamless web of large technological systems, such as nuclear or missile development programs, an analyst may need to pull together detailed knowledge of fertilizer plants and uranium enrichment processes, of development theory and nation-building, and of economics and ethnic conflict. How can the social fabric of the Russian Federation be held together, and how much can that fabric fray before Russia’s nuclear weapons custodianship is threatened? Would smothering North Korea in trade incentives and aid wean it off its nuclear appetite? And do we know how to answer the sorts of questions that the post-Cold War world puts to us?

The current nonproliferation quintet drones on repetitiously. Other themes never appear in the score, while the central motif--security--is not well developed. Meanwhile, in international relations theory as a whole and in the real world of nuclear weapons, chemical weapons, and ballistic missiles, an entire symphony resounds.

Those of us studying or trying to affect the course of nuclear proliferation need to take ourselves out of the social vacuum of security assurances and treaty obligations, out of the theoretical oasis of balancing behavior and self-help systems. We need instead to connect with the mundane reality of nuclear weapons: trade policy and economic growth; personal ambitions and manufacturing plants; ethnic politics and the politics of getting published in scientific journals. The result may sound more like a cacophony than a harmonious whole.

But if we are not sequestered within narrow analytic limits, we improve our chances of dealing effectively with the challenges of nonproliferation policy.
Steven Flank

1992),


21 These dynamics, for military industries as a whole, are covered in James Everett Katz, ed., Arms Production in Developing Countries: An Analysis of Decision Making (Lexington, Mass.: Lexington Books, 1984); and James Everett Katz, ed., The Implications of Third World Military Industrialization: Sowing the Serpent's Teeth (Lexington, Mass.: Lexington Books, 1986). The role of second-tier supplier was an important one for Brazil in the past, as it is for China and North Korea now. On exports from Brazil, see Scott Tolleson, "Brazilian Arms Transfers, Ballistic Missiles, and Foreign Policy: The Search for Autonomy," Ph.D. diss., Johns Hopkins University, 1991; for China, see John Lewis, Hua Di, and Xue Litai, "Beijing's Defense Establishment: Solving the Arms-Export Enigma," International Security 15 (Spring 1991), pp. 87-109; on export markets for space, see Brian Chow, Emerging National Space Launch Programs: Economics and Safeguards (Santa Monica, Calif: RAND National Defense Research Institute, 1993), RAND Report #R-4197-USDP.

22 Emanuel Adler, The Power of Ideology: The Quest for Technological Autonomy in Argentina and Brazil (Berkeley: University of California Press, 1987); Flank, op. cit., (1993/94), esp. pp. 77-88. How nuclear or missile technologies achieve technological autonomy is no longer self-evident. They no longer seem compulsory components of a technologically advanced society. Many development programs now include state and non-state actors, with greater weight given to the private sector in furthering development and growth. As a result, nuclear and missile system-builders have more difficulty recruiting government agencies or downstream or upstream industries into their alliances.


26 Clinton's U.N. address and responses, quoted in John Morrocco, "U.S. Sets Guidelines for Arms Control," Aviation Week and Space Technology 139 (October 4, 1993), pp. 56-57. Similarly, Thomas Graham's statement to the second NPT Preparatory Committee notes that extension of the NPT would be valuable "both in the security space and in the area of social and economic development," and then proceeds to discuss only the traditional nonproliferation measures listed above. Statement by Thomas Graham, Acting Deputy Director, U.S. Arms Control and Disarmament Agency, to the Second Meeting of the Preparatory Committee for the 1995 Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, United States Mission to the United Nations, Press Release USUN 5-(94), January 21, 1994, quotation at p. 1.

27 The idea was first proposed by someone outside the realm of traditional nonproliferation policy, as is the idea itself. Thomas Neff, "A Grand Uranium Bargain," The New York Times, October 24, 1991, p. A15.

28 Contrast the joint U.S.-Russian-Ukrainian statement with the joint U.S.-Russian statement following the summit meeting of the three presidents in January 1994. The former deals with "respect for [Ukraine's] independence, sovereignty and territorial integrity," and economic assurances "to refrain from economic coercion designed to subordinate...the rights inherent in [Ukraine's] sovereignty and thus to secure advantages of any kind," while the latter addresses measures that fall entirely within the three traditional policy categories described above. "Statement by the Presidents of the United States, Russia, and Ukraine, January 14, 1994," in Weekly Compilation of Presidential Documents 30 (January 24, 1994), pp. 79-80; and "Joint Statement on Non-Proliferation of Weapons of Mass Destruction and the Means of Their Delivery, January 14, 1994," in Weekly Compilation of Presidential Documents 30 (January 24, 1994), pp. 80-83.


37 Contrast the South Korean outcome with counterproductive attempts by the United States to force India and Brazil into compliance with the MCTR, a technology denial regime for dual use technologies in the space and missile sector. The larger political and economic implications of the trade and technology transfer issues were ignored. The U.S. attempts only reinforced the drive for technology autonomy that fueled both the Indian and the Brazilian space and missile programs in the first place. See Scott Tollesfon, “Brazil, the United States, and the Missile Technology Control Regime,” ch. 11 in Tollesfon, op. cit., pp. 382-518; and Flank, op. cit. (1993), pp. 331-35.

38 While these particular constituencies may not be involved in societies without economic liberalization, the processes of debate, alliance-building, and dynamic construction and reconstruction of shared understandings all take place among whatever groups are involved. Thus bankers may not have influenced nuclear decisionmaking in Stalin’s time, but scientists, military officers, party politicians, and industrial managers surely did.


42 For example, in pointing out the difficulties of combating proliferation threats by establishing strong, unified export controls, Robert Rudney writes that, “Confronting these challenges is a Western world in the process of a security mutation and in the throes of an economic downturn and increasingly acrimonious commercial competition....Increasingly, complex security and defense issues are becoming intermeshed with equally intricate political and economic interests, thereby threatening to paralyze effective policy-making.” Rudney, “Introduction,” in Kathleen Bailey and Rudney, eds., Proliferation and Export Controls (Lanham, Md.: University Press of America, 1993), pp. xv-xx, xvi-xvii.

43 As the Iraqi case demonstrates, there can be serious risks with such policies. On the other hand, the current system makes it difficult to integrate proliferation into normal politics. For example, the authority to regulate exports now comes from an executive order which requires the president to find “that the proliferation of nuclear, biological and chemical weapons, and of the means of delivering such weapons, constitutes an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States, and hereby declare a national emergency to deal with that threat.” Executive Order 12868--Measures to Restrict the Participation by United States Persons in Weapons Proliferation Activities, September 30, 1993,” in Weekly Compilation of Presidential Documents 29 (October 4, 1993), pp. 1935-36.


45 We would be battling “the conviction of some states that non-conventional weapons are the sole guarantee of national security, turning national territory into an invulnerable ‘sanctuary.’” Peter van Ham, Managing Non-Proliferation Regimes in the 1990s: Power, Politics, and Policies (New York: Council on Foreign Relations Press, 1994), p. 51.


48 Recent policy-oriented analyses rely heavily though implicitly on a realist or neorealist framework, such as those already cited in this essay, including Bailey and Rudney, op. cit.; Findlay, op. cit.; and van Ham, op. cit. Academics working in the field are also mostly limited to this narrow perspective. For an attempt to break out of these restrictions, which succeeds only sporadically, see Zachary Davis and Benjamin Frankel, eds., The Proliferation Puzzle: Why Nuclear Weapons Spread (and What Results), special issue of Security Studies 2 (Spring/Summer 1993).


50 This “new institutionalism” is discussed in Powell and DiMaggio, op. cit.; and Finnemore, op. cit. The theory addresses “the increasingly well-documented feedback effects of social structures such as norms, shared expectations, and even international organizations on actors such as states. Neorealist theory takes preferences as given and understands them to drive international interaction....The fact that states adopt policies not as an outgrowth of their individual characteristics or conditions but in response to socially constructed norms and understandings held by the wider international community demonstrates an embeddedness of states in an international social system that conventional approaches ignore.” Finnemore, op. cit., pp. 593-95.

On the role of knowledge- or profession-based ("epistemic") communities, see Peter Haas, ed., Knowledge, Power and International Policy Coordination, special issue of *International Organization* 46 (Winter 1992).