

## Chapter 6:

Hawks, Doves, But no Owls: International Economic Interdependence and Construction of the New Security Dilemma [1]\*\*\*

in Ronnie D. Lipschutz, ed. *On Security*, New York: Columbia University Press, 1995).

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### Introduction

During much of the Cold War, national security was defined primarily in terms of military threats to state, society, and industry. In this last category, we can add concerns about oil and other raw materials, whose reliability of supply could never be assured with confidence through global markets. Those concerns have, for the most part, now disappeared, to be replaced by language focused on economic "competitiveness" (a modern variant of old Social Darwinist arguments) and threats to it by other countries. There are two perspectives embedded in discussions of this new "security dilemma." The first postulates declining national welfare if competitiveness is lost; the second, a threat to the American ability to prosecute major wars against unnamed adversaries. Advocates of the first perspective propose major government intervention into and control of research and development. Inasmuch as this remains ideological anathema in the United States, the second offers a more acceptable rationale for such intervention, invoking military security arguments that do not differ very much from those sometimes put forth during the Cold War.

In this chapter, I examine the impact of international economic interdependence on recent debates over the redefinition and reconstruction of "national security." I explore how the forces of interdependence influence those debates by reducing military threats in the view of some analysts (whom I call economic "doves") and increasing military vulnerabilities in the view of others (whom I call economic "hawks"). The arguments by

both sides can be simply stated: Interdependence reduces threats because it weakens incentives for military conquest. But at the same time, interdependence increases vulnerabilities, and threatens to weaken the state, because potential military resources--especially high-technology ones--are increasingly found in global commercial markets over which states have little control. Policy responses are, in some countries, at least, focused on reducing vulnerabilities and strengthening the state through strategies of market control, indicating that "hawks" have come to dominate the discourse of economic security. In examining these debates and policy strategies, this essay is both an exploration of the interaction between material and cognitive factors that shape the political elite's new definitions of security and an assessment of their policy responses.

I begin by constructing the arguments made by both "doves" and the "hawks" about the connections between international economic interdependence and national security. I then examine in a preliminary way how economic interdependence between the United States and the Soviet Union during the Cold war--a relationship characterized in U.S. policy debates as having important security implications--affected perceptions of state power and security of the principle actors. In the final section I briefly examine the changing security implications of international interdependence in the post-Cold War period in three regions--the former Soviet Union, the Third World, and the industrialized countries of Western Europe--and relate these to the "construction" of national security in economic terms.

#### The Argument Defined

My argument can be stated succinctly: Assuming that state actors in the international system will continue to seek their security through military means, increasing globalization of production and exchange presents them with what I call an "economic security dilemma." This new "dilemma" changes the way state decision-makers construct threats and, consequently, changes arguments about the requirements for maintaining and increasing national security. Military threats are reduced in

that construction, since there are few, if any, specific opponents in evidence, but fears of military vulnerability increase. The intensity of these fears is, on the one hand, a function of the historical primacy of the state in the military realm and, on the other hand, a function of the position of the state in international markets. This combination arises because, nowadays, those cutting-edge technologies most vital to military power are found not in defense research labs but in global commercial markets. As a result, autarky and a narrow focus on military R&D in the face of the globalization of commercial high technology production and exchange severs the state from the fruits of technological innovation. Therefore, if states wish to maintain access to these technologies, they must seek it through markets. Markets are not wholly reliable, however, since there is at least some possibility that they could be controlled by rivals (or firms acting together) who could block or manipulate access in ways that prevent an importer from acquiring desired capabilities. The discussion of Soviet technology trade with the West during the Cold War, below, illustrates this point.

A second problem for states is that if they secure resources through the market--as they are increasingly compelled to do--they must also acquire property rights on the basis of market rational behavior so as to provide innovators with the stability of legal protection. The vulnerability consequences of an inability to secure such property rights are illustrated here by the case of the Soviet Union, which was undercut by the diffusion of military technology to its rivals (and, as we shall see, similar arguments are being made today on behalf of the United States).

Securing domestic property rights does not, however, assure the state's control over the fruits of innovation, inasmuch as unhampered global markets can diffuse sophisticated technologies to military rivals. In general, efforts to acquire or the freedom to sell technological resources necessary to military strength through commercial markets reduce state autonomy without necessarily increasing capabilities. Perceptions of reduced

autonomy and capability lead to fears of increased vulnerability. The discussion of the consequences of increasing Soviet economic dependence on the West during the last stages of the Cold War and the story of Third World vulnerabilities in the post-Cold War era elaborates on this point.

In order to counter these autonomy and capability-reducing effects, political elites in modern industrial states have devised three kinds of policies that allow them to exercise market control. The first has as its goal the preservation of state autonomy. It focuses resources on domestic military research and development in order to capture the fruits of innovation for the state (there is, in the United States, strong ideological opposition to such a strategy, although it was the dominant strategy during the Cold War). But the diversion of commercial resources to military applications reduces commercial competitiveness, weakening overall national economic capabilities. Given the argument that innovation occurs primarily as a result of market forces, falling behind in commercial competition ultimately means falling behind in military competition. The Soviet case, under limited opening to the international economy, nicely illustrates this argument.

Second, in an additional effort to preserve autonomy, political elites may attempt to restrict the sale in global markets of home-grown commercial technologies with military applications, so that those technologies do not fall into the hands of military rivals. But these restrictions tie the hands of commercial technology producers and reduce their ability to innovate. Once again, capability is increased in exchange for autonomy. Thus, to maintain the economic foundation of military strength, states must allow markets to operate, more or less freely, a condition that, as noted above, appears to increase vulnerability. Furthermore, trade restrictions expand the role of the state in society in unacceptable ways. Evidence for this argument comes from the story of U.S. export control policy in the Cold War, and that experience should provide a lesson to policy elites who want to extend export controls over commercial

technology to Third world countries.

Finally, political elites whose states have achieved a measure of technological proficiency may join together in co-production projects with other states and permit strategic transnational corporate alliances among their private firms. Through this means, on the one hand, they lose less autonomy than they would through acting in competitive markets; on the other hand, such projects may preclude the competition necessary to stimulate innovation. The autonomy-capability tradeoff in this instance is unclear, however, new policies pursued in post-Cold War Europe illustrate the argument.

In short, market allocation of commercial resources necessary to military strength, though essential to innovation, threatens the state's ability to secure those resources. The result is, apparently, a "new" security dilemma under international economic interdependence, as seen from the vantage point of the "hawks." To ensure access to military resources within increasingly global commercial markets, rational state actors will try to consolidate market control in such a way as to stabilize open markets while, simultaneously, reducing the possibility of market control by others and still maintaining the commercial competitiveness necessary to military strength. This is no easy task, even under the best of circumstances. It elevates questions of tactics and ploys to "raise the stakes" to the highest levels as a means of mobilizing support for such strategies. Only a very few states, under certain conditions outlined below, have been able to succeed in such an effort, and it is by no means clear that the United States is among them.

In the following section of this chapter, I elaborate on these arguments. I begin by tracing the origins of the recent conceptual linkages between security requirements and economic interdependence in the academic literature. I then reconstruct the security debates over the impact of interdependence, and finally I outline alternative policy responses.

The Dilemma Defined

International Economic Interdependence and National Security

The connection between international economic interdependence and national security has not, in my view, been explored with sufficient care in the modern security studies literature. In recent studies of international interdependence, little attention has been paid to security issues, despite the fact that its growth has generally meant the nation-state's increasing vulnerability to external forces, a phenomenon commonly thought to have security implications. At first glance this is surprising, because vulnerabilities arising from growing economic transactions and linkages have resulted from the increasing allocation of goods and services by international market forces. The expansion of these forces has meant the state's increasing material dependence on goods produced in other states, implying vulnerability to a disruption in the flow of raw materials, goods, and services. They have meant a loss of autonomy in economic decision-making, and they have meant increasing political entanglements that constrain foreign policy choices.

What the literature has not suggested, however, are hypotheses specifying the kinds of dependence, loss of autonomy, or entanglements that would directly threaten the state's ability to provide for military security. This raises the possibility that the posited threats are empty ones. Despite a growing awareness of the overlap between the spheres of politics and economics, and a burgeoning intellectual interest in international political economy, the spheres of security and economics have, for the most part, been considered separate and distinct. This remains much the case, even today. Security studies continue to be concerned more with the state's "high politics" of war and military power, and not the "low politics" of international economic transactions.

Historically--that is, since 1945--the field of security studies minimized the impact of international economic interdependence on national security for two reasons. First, security studies were concerned primarily with the phenomenon of war and with the threat, use, and control of military

force.[7]\*\*\* Traditionally, moreover, the responsibility for countering military threats to national security has been lodged in the state; therefore, security studies have generally taken the "state" and its ability to ward off military threats and defend the nation in time of war as the central focus of analysis. Although the forces of international interdependence have always restricted the state's autonomy of action in other areas, during the Cold War it was assumed that the military sphere of state autonomy remained unaffected. American dominance in the international economy, and the subordination of economic concerns to alliance politics, further ensured that this division would remain a clear-cut one.

Until recently this assumption has been warranted. Economic interdependence among nations was, and is, a function of growing international market forces, which has varied over the past century, whereas the industrial capabilities involved in the development and maintenance of military strength have, historically, not been subject to market allocation. By the end of the 19th century, many, mostly European, nation-states had consolidated their monopoly on the use of force and their near-complete control over the supply of resources and territory used to enhance military power. States that did not have the internal capabilities to marshal resources for their military force joined together in alliances to enhance their security. They did not seek security through reliance on the market.

Indeed, as Barry Buzan points out, markets are a constant source of insecurity; they brook no alliances amongst buyers and threaten inefficient sellers with extinction. It is no wonder, then, that the modern state would not want to leave the vital function of securing its territory from military threats to the vagaries of the marketplace. So the market forces that gave rise to the vulnerabilities of interdependence and chipped away at the state's autonomy and capacity in international trade, investment, and finance did not affect the state's capabilities to pursue its security interests.

A second reason why international economic interdependence

was minimized in the security studies literature was because its focus was primarily on the United States and its allies. The United States' preponderance of power implied its relative independence; within the alliance, its dominance in all issue areas essential to the maintenance of military power ensured relatively autonomous control over material resources necessary for security. The same internal economic resources which supported a strong American military machine were used to supply aid and provide market access to allies in exchange for agreement with U.S. security preferences.

Much of the security studies literature has assumed the continued dominance of the United States in its overall power relations with other Western capitalist nations and the general irrelevance of market forces. Moreover, the system of free trade and comparative advantage envisioned in the early post-war period and codified in the Bretton Woods system was assumed to be static, in much the same way as international relations was seen as almost unchanging. It was constructed under the assumption that absolute growth for all was assured, but that the relative ranking of nations participating in the system would remain the same. It was further assumed that the technical advantages that had accrued to the United States would never be lost, and that all others would be carried along in its wake. As long as technological change was driven by military investment and R&D, this continued to be more or less true. But as we shall see below, the gradual divergence between military and civilian-oriented technologies exposed the fundamental problem with this particular set of assumptions about the economic universe. And by the 1990s, arguments about relative economic decline had opened a new security debate in the United States.

In short, both of the assumptions underlying the exclusion of economic interdependence from security studies have been undermined in the last twenty years: That the military domain of state autonomy would remain unaffected by the forces of interdependence was challenged by the changing relationship between military and commercial technology and the globalization

of production and exchange; and that U.S. military independence--rather than interdependence--would not find itself challenged by the more general phenomenon of relative American economic decline.

Economic Interdependence and the Redefinition of Security  
How have the challenges to these assumptions affected security debates? Of course, because the threat of war is not the only security threat that states face, and because military power is not the only means by which national security can be assured, one group of analysts has suggested that international interdependence has threatened national security in ways that are more indirect and not easily countered by military force. If the mandate of the state to provide security is broadened to include both the preservation of territorial integrity and societal well-being, then the forces of interdependence that are chipping away at the state's autonomy and capacity to maintain the integrity of its territory and provide for the well-being of its society will also threaten national security. But it is also entirely possible that some of the forces of interdependence actually enhance the security of society--that is, enhance societal well-being--even as they undermine the autonomy and capacity of the state. For example, a state might find itself unable to innovate technologically in order to keep up with changes in the global economy, resulting in a declining standard of living. High levels of foreign investment in that country might be able to restore this standard, but at the potential cost of the host state's loss of control over strategic parts of the economy.

Conversely, expanding the domain over which market forces hold sway may ultimately make society less secure, too. The question that Karl Polanyi addressed decades ago could be raised anew: If the expansion of the market also reduces the autonomy and capacities of the state, how can society be protected from the most destabilizing consequences associated with the introduction of market forces? The idea of complex

interdependence reinforces the need to distinguish between the security of the state and the security of society.

Policy-oriented discourses around the redefinition of security, however, have ignored these arguments. Instead, they have focused on the impact of interdependence on the state's security under more traditional assumptions about its role in maintaining the security of society. Those dominant security debates ignited by the perceived impact of international economic interdependence continue to characterize security more narrowly, framing it as the state's ability to marshal resources to counter only military threats. Consequently, these debates center around the distinction between threats and vulnerabilities. Below I explore how the economic "doves" see interdependence as a source of threat reduction, while the economic "hawks" focus on the potential of interdependence to increase vulnerabilities.

#### Arguments by "Doves": Interdependence and Military Threats

Threats have to do with the intentions of others that affect a state's national security. Do others intend to attack, invade, or initiate an economic embargo to cut off vital resources? Or are they willing to negotiate the peaceful settlement of disputes, arms control agreements, and treaties to protect security? Can international economic interdependence modify those intentions in ways that reduce military threats? Such questions can be traced at least as far back as the Manchester liberals, although the validity of their answers has always been open to debate.

Today's economic doves suggest that there are three ways in which interdependence can reduce potential military threats. First, in *Power and Interdependence*, Keohane and Nye argue that economic interdependence among advanced industrial states can minimize threats directly by reducing incentives to use force against one another in settling their disputes. But an opposite argument can be adduced, as well. Waltz argues that, because the terms of interdependence may favor one nation over another, interdependence can spark new conflicts, something that

is not possible among states who remain aloof from one another.\*\*\* Who is correct?

To manage such conflicts, states have institutionalized their interdependencies in international regimes. The rules and procedures of these regimes enforce the norm of reciprocity and ensure a convergence of expectations that can lead to compromise. Mediated through international regimes, interdependence reduces the fear of threats to national security from economic partners by reducing their incentives to translate power into the use of military force. This was the argument circulated within U.S. policy circles during the early days of detente in support of increasing economic interdependence with the Soviet Union. It is an argument supported by the Western Europe's evolution from bloody balance of power politics to the halting but relatively peaceful regional integration of the European Community.

A third argument linking international economic interdependence to the reduction of military threats focuses on the globalization of production and exchange. "Globalization" increases competition among states for wealth and power although, at the same time, it shifts economic priorities in ways that can reduce traditional threats to national security. Globalization means that the factors of production have become increasingly mobile: Capital moves freely across national boundaries (indeed the cost of capital in the industrialized countries is rapidly converging); corporations can easily move their bases of operation to lower-cost production areas; technology and information diffuse almost instantly across national boundaries; raw materials are rapidly transported from their source to production sites thousands of miles away.

The consequence of globalization is not only the growing perception that a more intense interdependence among advanced industrialized states has arisen that can reduce incentives to issue military threats against one another; it has also created a heightened fear of economic competition among industrialized states as they search for ways to ensure that innovative activity takes place on their territory and not elsewhere. Because an

open international economy, and the institutions that bolster it, foster global production and exchange, the argument runs, if national firms are not competitive internationally, the societies in which they are based will grow poorer as capital moves elsewhere in search of a better rate of return. To enhance their own power, therefore, states will seek to ensure that wealth-generating production stays within their territory. Most analysts agree that those nations that have a skilled workforce, and are capable of rapid technological innovation to adapt to new market opportunities and make production more efficient, will be the most competitive internationally. Technological advance is crucial to a state's successful participation in an interdependent international economy.

As a consequence of heightened perceptions of economic competition among trading partners, there has been an important shift in the economic priorities of industrialized nations. The foundation of a state's economic strength, and its ability to compete internationally, is no longer sought in the promotion of heavy industries that depend on relatively simple technology and a large unskilled labor force. It is sought, instead, in knowledge-based production that relies on a cadre of highly trained engineers and a smaller, technologically-sophisticated production workforce in all sectors of the economy. A country's ability to compete internationally lies in its capacity to absorb new technologies into the production process in all sectors and apply them efficiently. Other factor endowments like raw materials and cheap labor are less important in creating competitive advantage and determining the total cost of production.

This shift in economic priorities can enhance national security by reducing threats. In the past, incentives to engage in military aggression often derived from opportunities to extract wealth from others in the form of land, raw materials, or industrial capability. Nowadays, more territory may not add to economic power, but innovative technology almost certainly does. High-technology industries would be of little use to a conqueror

without the expertise to exploit them, or without the cooperation of the local population. With some important and notable exceptions, territorial aggression for economic gain is increasingly less frequent and less rational than a strategy of innovation.

#### Argument by Hawks: Interdependence and Vulnerability

Ironically, however, if the interdependence which fosters high-technology competitiveness can reduce traditional threats to national security, it can also increase the state's vulnerabilities in ways that undermine the state's confidence in its ability to provide for national security. Vulnerabilities should not matter if threats are reduced and if interstate violence is diminished but, nonetheless, as security debates over "threats" have subsided, arguments about "vulnerabilities" have intensified. Economic hawks find vulnerabilities in the comparison of relative power positions among states and measure them by comparing one's military capabilities with the capabilities of real or imagined military rivals. It is this last point that is problematic: Is an economic rival also a military one? Or is such a rival simply a postulate of the argument?

Raymond Vernon and Ethan Kapstein, following every realist since Thucydides, argue that there is a persistent national need to reduce vulnerabilities by maintaining or increasing one's relative power position in the international system and maintaining as much autonomy as possible, notwithstanding changes in threat perceptions. As they put it: "Whatever the contingencies and threats that defense planners foresee, their hope is to maintain the largest possible measure of superiority over the enemy." Despite variation in their perceptions of the intensity, kind, and source of threats, states under international anarchy continue to measure their vulnerabilities by comparing military capabilities with other states, by assessing their dependence on strategic resources located on the territory of other states, and by assessing their economic and diplomatic entanglements with others by analyzing the effects of

those entanglements on their power to control outcomes in such a way as to maintain their capabilities and reduce dependencies.

How does increasing globalization of production and exchange increase the state's perception of insecurity by increasing economic vulnerabilities? One answer lies in the encroachment of the market on the allocation of goods and services necessary to military strength, and the subsequent chipping away at the state's ability to control the allocation of those resources. The trend in increasing state control over those resources, evident since the late nineteenth century, would seem to have reversed itself in the late twentieth century.

Market allocations to defense have grown since World War Two because military power has increasingly relied on commercial inputs. There are two related reasons for this. First, weaponry is increasingly developed as a "system" that includes command, control, and communications components, as well as logistics and support services. Many of the necessary components of these "systems" are developed in the commercial sector. As a result, the concept of the "defense industrial base" is, once again, becoming increasingly popular among defense planners. Economic hawks define the defense industrial base as any good, service, component, or input to the national economy necessary to the security interests of the state. This means that commercial firms who respond primarily to market signals may nonetheless produce goods necessary to the maintenance of military strength. Second, the post-war period has witnessed the growth of systems developed for commercial purposes that, while previously considered inaccessible or irrelevant to military activity, are now considered critical. The capabilities for land, sea, air, and space warfare have grown tremendously, and the range and targeting capabilities of weaponry have been perfected. This means that commercial and military environments have come to overlap in many more ways than were once the case.

This overlap has meant that the manufactured goods and technology for these environments have acquired a "dual" use. Satellites survey the globe's weather patterns in order to

predict crop performance; the same technology can be used to verify whether states are adhering to arms control agreements. The microchips found in wrist watches, computers, and VCRs were also found to have been in the trigger of the bomb that destroyed Pan Am flight 103 over Lockerbie, Scotland as well as in the bombs dropped on Iraq during the Gulf War. Electronic components developed for automobiles have been adapted for use in tanks. Dual-use means that technologies needed for weapons systems are also traded in commercial markets. Thus market allocation of military resources has, in effect, grown enormously throughout the post-war period. This will be even more the case in the future.

Given the increasing reliance of military power on such commercial inputs, the globalization of production means not only that the market will, increasingly, allocate goods necessary for national security but also that those goods cannot necessarily be confined to markets that states can control. From a classical liberal perspective, if weapons have become vast "systems," thereby broadening the defense industrial base in the context of globalized production, it is natural that market forces will also create specializations of production. Consequently, different firms around the globe will occupy niches in markets that supply the defense industrial base of any particular nation. Vernon and Kapstein argue, for example, that market forces will push most countries to rely on foreign technologies in order to maintain their own defense capabilities.

This inability to control those global markets that supply goods to the defense industrial base can lead to perceptions of vulnerability in the "home" state in two ways. The first is via the vulnerability of dependence. Theodore Moran argues that if the sources of supply to the U.S. defense industrial base become concentrated in too few hands, U.S. security becomes increasingly dependent on others. As the state becomes increasingly dependent upon resources outside its borders, its ability to act autonomously is threatened and its capacity to channel resources to its military through authoritative allocation is diminished.

Moran suggests a remedy for vulnerability: No four countries or four companies should supply more than fifty percent of the arms-length world market in goods vital to the defense industrial base. The role of government is to stimulate competition and prevent the emergence of monopoly suppliers in order to stimulate efficiency.

Michael Borrus and John Zysman take issue with the assumptions behind this argument and policy prescriptions that follow.[30]\*\* In their view, globalization does not necessarily lead to a specialization of production based on efficiency criteria. Market control becomes a new "threat" to replace the threat of territorial control. Indeed, they agree that just because threats to a nation's economy and resources do not arise in the form of military aggression, the threats themselves have not disappeared. States in intense competition with one another will seek to manipulate markets to control the resources of others. For Borrus and Zysman, however, the loss of market control in an environment of global competition is simply a symptom of a more pernicious national security problem. In their view, vulnerability is measured by comparative national commercial technological strength; it does not result so much from dependence as from comparative technological weakness. Their analysis thus takes the causal arrow one step back and focuses on why a nation's defense industrial base becomes vulnerable to the forces of globalization.

For them, the defense industrial base requires sourcing from abroad because home industries have lost their ability to innovate. Although there are many reasons for the relative decline of innovative capacity, one explanation points to the diversion of civilian resources to military projects. This is because, in the present period, the contribution of commercial technology "spin-ons" to military applications may be far more significant than military technology "spinoffs" to commercial industry. Civilian technology is immediately applicable, often without adaptation, to military use. For example, in sophisticated automobile models, semiconductor chips have been

developed which operate in real time to control the car's mechanical systems in environments that are often as hostile as the battlefield. In the United States, however, the military importance of commercial innovation has been underestimated. Moreover, in the 1980s, U.S. civilian research and development commanded a smaller fraction of GNP than in Japan or Germany, and military research and development captured 70% of all resources devoted to technological innovation. And the Reagan-era military build-up siphoned off scientific and engineering talent into military projects with limited commercial applications.

The argument, then, is that technological leadership is the basis of economic power, and economic power is the foundation of military might. Those states where commercial innovation flourishes and which provide the source of production for another's defense industrial base are those who are economically competitive and thus increasingly powerful. And their economic power is a growing source of political influence and can, under the right conditions, be adapted to bolster national military capabilities.

Beginning in the mid-1980s, many officials in the U.S. Department of Defense started to feel the impact of these forces on the ability of the United States government to provide for military security. First, resources required for the defense industrial base were increasingly found in foreign markets, revealing the erosion of innovative capability in domestic high technology industries. For example, in the mid-1980s, the Defense Department began to express concern that a general decline in the U.S. semiconductor industry could weaken the entire American electronics industry so that it would no longer be in a position to advance rapidly enough to offset any advantage the Soviet Union might have in numbers of troops or weapons.

This apparent relative decline in control over military resources by the United States triggered perceptions of vulnerability in the face of those who would control markets for the supply of strategic goods. In a widely publicized book, *The Japan that Can Say "No"*, written with Sony President Akio Morita,

Shintaro Ishihara wrote:

It has come to the point that no matter how much they [the United States] continue military expansion, if Japan stopped selling them the chips, there would be nothing more they could do.... If, for example, Japan sold chips to the Soviet Union and stopped selling them to the U.S., this would upset the entire military balance....the more technology advances, the more the U.S. and the Soviet Union will become dependent upon the initiative of the Japanese people....

Even if such statements were exaggerated and intended for domestic Japanese political consumption, the U.S. Department of Defense translated the book and distributed it widely, suggesting that it confirmed their fears of economic vulnerability.

The United States' position in the last decade of the Cold War, then, provides a good example of the economic hawks' formulation of a new economic security dilemma to replace the old one: Growing market allocation of dual-use technologies and continued U.S. concentration on military vs. commercial R&D have combined to reduce state autonomy in the effort to secure the resources of military strength. This has led to increased vulnerability despite reduced security threats. But, as we shall see below, the United States is not alone in experiencing this dilemma, although it manifests itself differently under different market conditions.

The Hawks' Policy Response: Can the State strike back?

The vulnerability arguments presented above form the core of the new security dilemma under international economic interdependence. Borrus and Zysman argue that, within this construction of the new economic security problem, the real question is not whether the forces of international economic interdependence decrease national security by shifting the allocation of military resources to the market, as Moran suggests. The central question is whether states can consolidate their power in the face of forces that decentralize market power

and in the face of other state actors who attempt to control markets. For policy elites, the essence of that dilemma is the tradeoff between state autonomy and technological capability and how that tradeoff is to be managed. Choices then revolve around the kind and degree of market control appropriate to reduce perceived vulnerabilities.

To reiterate, states have a range of policy choices through which they can control markets. They can pursue extreme import substitution and industrial policies that assure that all innovative activity takes place on their soil. These policies will result in expanded autonomy but, ultimately, reduced capability if they concentrate resources on military research and development at the expense of commercial development, or if they deny imports of commercial technology required as inputs into industrial activity. Another means of increasing autonomy is through export control. Export control policies, however, give markets to competitor nations that permit uncontrolled exports, reducing profitability and returns to R&D, thereby also reducing capability.

Alternatively, states can allow markets to operate freely. Autonomy will be reduced and the contribution of market competition to innovative capability will depend on the technological level of the country's industry and the structure of the international market, that is, whether it is dominated by a few or many suppliers. If dominated by many suppliers, the state can sponsor the development of its own industries and leave markets open; autonomy may be reduced, but threats of dependence are reduced as well. If the market is dominated by a few suppliers, then states will be tempted to close markets to prevent vulnerability at the hands of those who could exercise market control. An intermediate strategy is cooperation and technology sharing agreements. Here, both autonomy and market competition are compromised, but the benefits to security are perceived by state actors to be greater than the costs.

The remainder of this chapter is devoted to an examination of the old and new economic security dilemmas under assumptions

of economic vulnerability resulting from increased interdependence and an assessment of the strategies outlined above that states use to exert market control. In the following section, I explore the Cold War history of growing economic interdependence between military rivals--the United States and the Soviet Union. The story of that growing interdependence suggests that the Soviet Union was a state that was unable to consolidate market control in the face of growing dependence, entanglements with the West, and loss of autonomy. It could neither prevent Western control of markets nor stabilize property rights in the process of reform geared toward meeting the West's conditions for entering into the Western dominated international economy. The United States, by contrast, was able to consolidate market control in the interdependent relationship, and U.S. and other Western private corporations were able to manipulate the markets for manufactured goods upon which the Soviet state came to depend. Nonetheless, the consolidation of market control through export controls had pernicious effects on political relations among Western industrialized countries, on the U.S. economy, and on its state-society relations. The following section tells the story.

#### USSR and U.S. Compared

##### The Soviet economic security dilemma in the Cold War

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At the beginning of the Cold War, Stalin refused to become part of the new post-war international economic order, and attempted to steer the Soviet Union in the direction of economic autarky. Import substitution was the top investment priority in the early 1950s. Attacking the "dictatorship of the Marshall Plan," Stalin announced the creation of the CMEA in order to reduce dependencies through control over a trading bloc that was secured from the influence of global capitalism. The Soviet defense industrial base was, consequently, dependent only on national and CMEA resources.

During the 1950s, however, Soviet growth rates fell-- not only because of the distortions of central planning but also as a

result of the inefficiencies of autarky. The Soviet Union had found itself on the sidelines in the race for economic prosperity as its technical expertise in commercial industry began to lag far behind the industrial capitalist nations. The same imperatives affecting the U.S. defense industrial base in the 1970s began to impinge on the Soviet defense sector by the early 1960s. That sector was always a top priority in the Soviet economy. But weapons systems requiring dual-use technologies meant that military strength increasingly rested on the civilian industrial base. And Soviet civilian technological innovation lagged further and further behind that of the West. The continuation of autarkic policies in an increasingly global sourcing network pulled defense innovation further behind.

Recognizing this lag, Soviet leaders, beginning with Khrushchev and ending with Gorbachev, initiated measures that would lead to a systematic but highly controlled opening to the international economy, while still preventing the creation of internal markets. Nonetheless, because the opening to the international economy was so limited, technology gaps between the USSR and the West widened and multiplied. The Soviet state responded to these growing vulnerabilities with expanded efforts to acquire Western technology vital to military industries. Although the Reagan Administration mistook the purpose of both legal and illegal technology acquisition efforts in the late 1970s and early 1980s for positive results in the Soviet defense sector, the acquisition efforts were real. Nonetheless, they failed to achieve their objective; acquisitions did nothing to narrow the high technology gap between the Soviet Union and the West. In fact, the gap continued to grow.

Only when Gorbachev came to power did the Soviet regime finally open the floodgates to the international economy and begin the process of creating internal markets. Initially, these moves were widely supported by Soviet economic hawks, who (it would now appear in retrospect were correct) believed that the USSR would not remain a great military power unless it could raise the technological level of its industry to meet the

standards of global competition. Opening to the West was one of the many strategies of renewal pursued to meet this goal.

The introduction of domestic reforms and the establishment of market ties with the West obviously failed to strengthen the security of the state; indeed, it had the effect of undermining the state itself. Why? The failure can be explained in two ways. First, western security and corporate concerns shaped the way the Soviet Union was initially integrated into the international economy. That integration was characterized by both dependence and peripheralization. Second, the particular sequencing of both external and internal reforms in the Gorbachev era worked to weaken the Soviet economy more than ever before by vastly increasing external debt. Both of these causes served not only to reduce the security benefits sought by the Soviet state, but further exacerbated the weakening of the Soviet state itself.

Western investments in the Soviet Union were, in any event, meager, and the pattern of investments, combined with Western corporate strategy, worked to ensure Soviet dependence on western technology.[44]\*\*\* Western private investment was targeted primarily for extractive industries and commodity production, and most joint ventures were in services and the marketing of Western imports. Investment targeted for manufacturing industries was largely confined to assembly operations, adding little value to the goods produced and intended for the Soviet market rather than for export. Component parts for Soviet plants were sourced in the West, inhibiting the creation of linkages between the joint venture and the rest of the economy. Corporate officials in the West believed that transfer of obsolete technology through these ventures was sufficient to capture domestic market share. Contractual provisions ensured that the most advanced Western technologies were withheld from the Soviet economy. Technology transfer was used as a "hook" in order to get a foot into the Soviet market, and "core" technologies were rarely included in joint venture agreements.

The problem of dependence and the peripheralization of the

Soviet Union in the global economy was compounded by the problem of faulty sequencing in the introduction of market forces. Because internal economic rigidities still persisted, Western technology was purchased as a substitute for economic restructuring; if Soviet industries were to compete in the world market, innovative technology would have to be imported. Soviet planners knew that if they tried to compete in the international economy with sales of oil, timber, furs, and other commodities, they would never be as competitive as those states who produced computers, advanced components and new materials. But hard currency was required for the technology purchases necessary to the production of these goods, and hard currency could be earned only through increased commodity exports. Export earnings, however, were subject to the vagaries of commodity markets, and when they could not cover imports, technology had to be purchased with Western credits. The debt to the West grew quickly.

Growing internal economic weakness meant that the Soviet Union and the rest of the Warsaw Pact were eventually plunged deeply into debt in order to purchase consumer goods and raise wages to stave off domestic unrest. East European and, later, Soviet debt to the West reached dangerously high levels in the 1980s, only to be reduced by drastic cuts in Western imports and massive rescheduling of loans. Subsequent decreases in the rate of economic growth and decline in living standards squeezed populations who could no longer be mobilized by ideological appeals.

Thus the conditions under which Western investment entered the Soviet economy both indicated and contributed to the rising vulnerability and, therefore, declining security of the Soviet state. Lacking a "developmental" state to create an investment code that would identify priority sectors as targets of foreign investment, Western capital was used to bolster extractive industries and light manufacturing, perpetuating the Soviet Union as a raw materials supplier and producer of labor-intensive goods. The Soviet state in the international economy was moving down the precarious path traveled by many Third World countries:

a weak state saddled with mounting debt and unfavorable terms of trade.

In sum, in the Soviet case, controlled attempts to secure resources for the defense industrial base in international markets helped to undermine the stability and, hence, the security of the state. The story of the Soviet demise is, thus, partly one of how the Soviet state first lost out on the capabilities acquired through the international diffusion of technology and, subsequently, how it became dependent on markets controlled by the West as its own defense industrial base became subject to the forces of globalization. Policies to cope with vulnerability reduced state autonomy but did not succeed in increasing capabilities.

#### The United States

By contrast with the USSR, the United States reduced its perceived vulnerabilities in its interdependent relationships with the Soviet Union by consolidating unilateral and multilateral control over East-West technology markets. The chief instrument of market control was the legal restriction of technology exports. Beginning in 1949, U.S. Congressional leaders and Administration officials made sure that America's major trading partners would also be military allies and, at the same time, they constructed a policy of economic warfare against the Soviet Union. This latter policy was embodied in the U.S. Export Control Act of 1949. The law stated that the "unrestricted export" of materials without regard to their "potential military significance" could "affect the national security" of the United States.

The second instrument of market control was multilateral technology export restrictions. This instrument was promoted inasmuch as the U.S. could not carry out the task of trade denial alone. Because the allies could sell the Soviets goods that the U.S. restricted, their compliance was needed in the export control effort. Thus, also in 1949, the U.S. took the lead in creating COCOM (Coordinating Committee), a multilateral "regime" to restrict Western exports to the Soviet bloc. The purpose of

the unified embargo was to wage "economic warfare" against the Soviet Union and thereby protect Western security by creating a broad list of goods to be embargoed by all COCOM members. This embargo list would restrict both military and non-military goods. The trick was to persuade the allies to accept these embargo norms based on economic vulnerability claims and to ensure compliance with the regime rules.

Although effective in reducing the flow of militarily significant technology to the Soviet Union, the multilateral control effort was achieved only at high political cost. Few other issues aroused as passionate a dispute between the United States and its Cold War allies. Few other issues signalled so clearly or so early Europe's emerging self-assertion and drift from the preferences of the United States. In particular, the 1980s witnessed acrimonious debate between the United States and its European allies over which technologies were to be restricted, and general allied disgust over America's extension of extraterritorial export controls. The surreptitious violation of COCOM regulations by allies, as seen in the Toshiba Corporation's illegal sale of submarine-quieting technology to the Soviet Union, became an important issue in ongoing trade disputes between the United States and Japan.

U.S. unilateral controls also carried high domestic economic and political costs. Declining U.S. competitiveness led high technology industry officials to argue that a central requirement for enhanced industrial productivity was the freedom to capture and maintain new markets abroad and an infusion of new (and sometimes foreign) capital into declining sectors. These requirements, however, clashed directly with export controls. Ralph Thompson, former senior vice president of the American Electronics Association, succinctly expressed the industry position when he stated that the relaxation of export controls would revitalize the competitiveness of American industry in the global marketplace: "In a situation where it's clear the principal confrontations now are economic rather than military, we certainly need to have the weapons released for use so we can

fight the battle properly." Export controls were, thus, utilized in debates over how to reconstruct the requirements for "national security" in an interdependent world. They also permitted some American industry officials to place the blame for their declining productivity entirely on export restrictions.

Two industry-government conflicts in the 1980s illustrate the painful tradeoff and paradoxical relationship between autonomy and capability triggered by export control policy. In 1987, General Motors and General Electric vigorously lobbied the U.S. government for export licenses to permit launchings of their commercial communications satellites from the Soviet Union. The Soviets promised a "fast track to the stars" with their Proton rocket. Their promise was a bargain at a cost of \$30 million per launch, half the cost of similar launchings in the West. State Department officials insisted, however, that it would not be in the U.S. national interest to issue export licenses for these satellites, because using Soviet rockets would provide the adversary with access to strategic U.S. technology, thereby potentially reducing relative U.S. technological capability.

The U.S. communications satellite industry, however, was in deep trouble. After the 1986 Challenger explosion, President Reagan had ordered an end to commercial satellite launchings by U.S. space shuttles, and American rockets were booked with military orders through 1989. Without launching facilities, the industry recognized, it would be at a grave disadvantage vis-a-vis Europe and Japan, who were not only constructing their own rockets, but permitting the Soviet Union to launch their commercial communications satellites. Furthermore, to avoid U.S. extraterritorial export controls on their Soviet launchings, these competitors were designing out American components, further harming the American industry. Therefore, the satellite producers argued, export controls would cause rather than prevent capability loss.

Congressional representatives, on the other hand, worried that if the U.S. communications satellite industry used Soviet

launch facilities, the fledgling U.S. commercial rocket industry would be destroyed. NASA officials opposed this view and backed the communications satellite industry, urging the administration to drop restrictions in the interest of U.S. "competitiveness." At first the government denied the export licenses to the Soviet Union, but permitted launches from China; later, it relented to allow some launches from the USSR. Arguments for market opening in the interests of capability enhancement seem to have won.

A similar set of conflicts emerged when, in 1986, Japan's Fujitsu Ltd. announced plans to merge its semiconductor business with Schlumberger Ltd.'s Fairchild Semiconductor Corporation. Like many firms in the U.S. semiconductor industry, Fairchild was ailing. In exchange for 80% of Fairchild, Fujitsu would invest \$400 million in the company over two years, making available all of its technology. Some observers estimated that the Japanese infusion of cash would make Fairchild a major player in the American market again, and Fairchild would leapfrog from 13th to 10th among world chipmakers.

Again, the U.S. government was divided in its assessments of the sale's implications. Many argued that actions like the proposed merger were just what the U.S. semiconductor industry needed to become competitive again. Others argued that the merger would jeopardize U.S. security interests. Since Fairchild made defense products under contracts worth \$150 million a year, Fujitsu would conceivably have had access to contracts, catalogs, and Defense Department documents. And since Japan traded with the Soviet Union, it was argued, the sale might easily compromise U.S. military security interests. The controversy caused Fujitsu to withdraw the offer.

Both of these cases illustrate the painful tradeoff between preserving military autonomy and relative capability through trade and investment restrictions, and stimulating commercial innovative capability through market opening. In the first case opening was preferred; in the second, it was denied. Overall policy on trade controls was inconsistent but, in general, export controls were given priority over measures with the potential to

increase U.S. competitiveness.

A second problem with trade and investment restrictions was that they led to an expansion of state control over domestic society. Part of the Reagan Administration's strategy to gain increased executive authority, so as to reduce perceived security threats and vulnerabilities in economic relations with Warsaw Pact countries, was to exaggerate vulnerability claims for the purpose of expanding the domestic scope of the state regulation in order to protect "national security." Export controls restricted attendance at scientific conferences in the United States where unclassified material was presented, and the Department of Defense was required to review unclassified scientific research before publication. The National Academy of Sciences and others argued that these controls impinged on basic constitutional freedoms in the United States, leading to the increased militarization of civil society.

The story of U.S.-Soviet economic relations during the Cold War nicely illustrates the new economic security dilemma that many policy elites will face in the post-Cold War era if they continue to conceptualize security within traditional state-centered and military assumptions. The Soviet Union, with a weakening defense industrial base, attempted to strengthen its position--not through increased domestic innovative activity, but through attempts to acquire technological resources in international markets. Those markets, however, were controlled by Western firms who manipulated them to ensure continued Soviet commercial dependence on Western inputs, thereby increasing Soviet military vulnerability. They were further controlled by both unilateral and multilateral export restrictions. There was no evidence that the sale of those technologies had bolstered Soviet military strength by closing the technology gap between the USSR and the West. These points raise the question: Which strategy, if either, was most responsible for the eventual Soviet collapse? In a dynamic sense, neither was. Rather, it was the initial Soviet decision to pursue autarchy which set it on a divergent development path that led to lower technological

capabilities and eventually forced it to seek external sources in order to try to catch up.

For the United States, the dilemma presented itself in a different form: export controls, intended to ensure that the fruits of innovation did not fall into the hands of military rivals, were resisted in the private sector because of perceived harm to domestic innovative activity. They were also resisted by scientific and technical elites on the basis of the argument that they impinged on constitutional freedoms.

The Economic Security Dilemma in the Post-Cold war era.

As I argued above, most policy elites who focus on the vulnerability effects of international interdependence face the dilemma of balancing their access to technologies necessary to military strength that provide security while keeping markets more or less open. This may, however, be more of a cognitive problem than a practical one. Since World War II, very few countries, except for the United States and the Soviet Union, have had either the technological edge or the practical possibility of reducing technological sensitivities to market forces. Even Japan, posited by some as a future "challenger," has little hope of achieving this position anytime soon. "Real" military vulnerability therefore remains more of a theoretical possibility than an existing fact; turning such theoretical possibilities into the threats that could motivate real security policies will be difficult.

As with the different dilemmas faced by the United States and the Soviet Union during the Cold War, the economic security dilemmas states face in the post-Cold War era will differ with their position in international markets and the resources available within their own sovereign jurisdictions. Their choice of measures for market control will ultimately be determined by the nature and extent of perceived vulnerabilities shaped by those material factors. Below I outline briefly how those dilemmas are likely to be perceived and whom they are most likely to affect.

The former Soviet Union (FSU)

One of the central economic problems in former Communist countries is the state's almost total inability to control markets and to establish stable property rights on the basis of market rational behavior. To establish stable property rights is, perhaps, the first and foremost requirement for the production of resources important to military strength in the era of globalization, since foreign investment will otherwise be stunted. The fact that Russia and the other republics of the FSU have not been able to do this means that it is one of the regions most vulnerable in the face of global economic interdependence. It also means, somewhat ironically, that the West could become vulnerable, and threatened, as a result of the region's disintegration, turmoil, and potential economic collapse. Within the Cold War logic, the prospect of the fragmentation of a powerful Soviet Union was a welcome scenario, inasmuch as a fragmented Soviet Union would be a less powerful adversary whose "threats" to western security would be reduced. In the aftermath of Communism, however, the threat is seen not as one of intention--of economic blackmail, leverage, and the use of economic relations for political and military ends--but rather as a threat of unintended chaos over which new and fragile governments will have little control. By the beginning of 1993, production had all but halted as large conglomerates became trading companies, extracting profits from barter. Supplies of goods and services could not be assured, idling other enterprises. And wage levels had collapsed, too, under the impact of inflation and devaluation of the ruble, leading to fears of technology exodus from the former Soviet Union to dangerous Third World countries, and replacing fears of technology exodus to the Soviet Union from the West.

Uncertainty over control of economic forces and the disintegration of the Soviet state has also led many of the thousands of Soviet scientists trained in building nuclear and chemical weapons to think about selling their expertise to the highest bidder, including states such as North Korea, Libya and Iraq, thereby increasing the military "threat" from those areas

to the West and to the former Soviet Union itself. In another example, a group of former party elites in Russia with good connections to the state bank--promising easy credit terms--bought dual-use space technology and planned in early 1992 to sell it in global markets. Although Russian President Yeltsin has threatened to impose sanctions on such activities, it is entirely unclear whether his government has the wherewithal to do so.

In order to prevent this technology exodus from the former USSR to other dangerous countries, the Bush Administration initially provided \$25 million to help finance an international science and technology center supporting former Soviet scientists and engineers so that they could redirect their talents to non-military endeavors and, more recently, has put substantial sums into the disassembly of nuclear weapons and purchase of nuclear materials. At the same time, however, the United States has blocked the purchase of missiles, rocket engines, satellites, space reactors, spacecraft and other aerospace technology from the former Soviet Union, in order to force the decline of the Russian space and military industry so that it could pose no future threat to the US. Many argue that this embargo could further force former Soviet scientists to sell their knowledge to potential military rivals in the Third World.

#### The Third World

Most Third World countries, except, perhaps, the Newly Industrializing Countries of East Asia, have little innovative capability, few technologies to offer for cooperative projects, and little state capacity to maintain autonomy in the face of international economic interdependence. Poor Third World countries have weak states, little control over markets, and limited ability to cushion themselves against shocks, imposed by changes in the international economy, that threaten what strength they have. By contrast, industrialized nations, with their resilient political institutions, strong economies, efficient bureaucracies, and control over markets and sources of raw materials supply possess the capabilities to withstand the

international economic vacillations that render less-developed countries vulnerable. Third World states are forced to import security resources from the international market. As discussed above, the need to import creates dependence on a supplier. The Cold War led each superpower to place stiff political and ideological conditions on the sale of militarily relevant goods, forcing weaker states to become their clients in order to maintain access to military resources.

In the post-Cold War era, marked by diminished ideological rivalry, with the commercialization of resources necessary to military strength, and more intense competition among suppliers, dependence on a single supplier has receded. Suppliers in the technologically innovative countries who are faced with the need to extend production runs will be eager to supply this market, increasing supplier competition even more. When dependence on a single supplier is lessened, industrialized states cannot impose "political conditionality" requirements on importers and may perceive that they have less control over Third World importing states and their use of military resources. And for many Third World states, expanded choices increase state autonomy.

Furthermore, without the security umbrella of a great power, third world technology importers may seek to build up an indigenous military-industrial base that will be safe from the vicissitudes of international trade. They may seek to acquire from abroad the advanced technology necessary for increased domestic production efficiency and dual-use technologies needed to build weapons' production capabilities. Iraq provides an example.

Both before and in the wake of Iraq's invasion of Kuwait, a rash of reports appeared throughout Europe and the U.S. accusing Western firms of selling to Iraq the very technology that enhanced the enemy's defense industrial base and jeopardized Western security in the Persian Gulf. Most of those purchases of commercial high technology were legal and were authorized by Western governments in the effort to help balance against Iran's

power in the Middle East. Western firms legally sold Iraq industrial production machinery which could be used to build nuclear weapons--indeed the U.S. Commerce Department approved 771 licenses to export \$2 billion worth of computers, chemicals and communications equipment to Iraq between 1985 and 1990. West German firms legally sold Iraq machinery for making gas centrifuges--which can separate uranium 238 from the more easily-fissioned uranium 235, an essential step in creating weapons-grade nuclear material. Furthermore, Iraq had been in good standing with the International Atomic Energy Agency (IAEA) because most of the technology it purchased could legitimately be used to enhance civilian production capabilities.

Indeed, throughout the 1980s, several Third World powers sought to develop chemical and biological weapons capabilities. Because traditional Western export controls were targeted on the Soviet Union, and the technology became increasingly available from non-Western suppliers whose export controls were lax, most weapons' production technologies were available on international markets. Even when controls were in place, private firms could legitimately claim that they were selling commercial, not military technology. Most firms knew that in Third World transactions, there were no legitimate institutions monitoring what was being sold and for what purpose.

The expected response in the future, therefore, would be for policy elites in industrialized nations to control technology exports to the Third World in much the same way that they controlled exports to the Soviet Union. If the Soviet case provides an example, however, extensive export controls beyond the restriction of military technology are not required and their costs in terms of reduced domestic innovative capability and restriction of constitutional freedoms at home far exceed the benefits. Recall that in the Soviet case, corporations did not sell their most advanced products, and still created dependence on their "core" technologies.

Furthermore, because of economic weakness, Third World purchases of advanced Western technology are likely to go the way

of Soviet purchases. Western technology had little "spillover" effect on the industrial base of the Soviet economy as a whole. The successful utilization of technology within any country depends on the extent to which its positive effects can be diffused throughout an industry, sector, or the economy as a whole. The success of commercial technology transfer depends on the nation's industrial structure and whether that structure provides for strong linkages among related industries through which the positive effects of innovation can spread. And the speed at which commercial innovation can be translated into weapons' systems seems to depend on the strength of the networks between scientists, engineers, and defense contractors in military and civilian industries and policy-makers in government.

Within a state that has a "military-industrial complex," these networks are both tight and stable. But in weak countries such linkages do not exist, and the positive effects of commercial technology imports on military strength will be small or nil. Finally, if scarce resources are invested in military technology, Third World states will undercut their ability to innovate and develop, perpetuating their dependence on the international market. This does not mean, of course, that they cannot develop weapons of mass destruction and crude, but capable, delivery systems. The cases of Iraq, India and China demonstrate this. But it is unlikely that they will be able to develop the sophisticated support and delivery systems necessary to make the weaponry wholly effective or reliable.

#### The Industrial States of Western Europe

During the Cold War, the United States provided the military resources perceived necessary for its allies' security. The NATO alliance itself weakened fears associated with the security dilemma among its members. These two factors alleviated much of their perceived need to commit resources to arms production and to create the structures necessary to translate commercial innovation into weaponry. Instead, U.S. allies concentrated on more profitable commercial innovative activity. These countries,

therefore, (with certain exceptions) began the post-Cold War era without having in place the 'networks' or policy communities necessary to immediately or effectively translate technology from commercial use to military application.

In the post-Cold War environment, however, several forces have converged to raise fears of a new economic security dilemma among decisionmakers within these states. The waning of the Cold War, the end of the Soviet threat and the Soviet Union and the relative decline of the U.S. economy have combined to pressure these states into providing the military resources thought necessary for their own security. But the rising costs of both military and civilian R&D necessary to do so appear prohibitive, and they have been unwilling to relinquish their full autonomy by completely ceding resource allocation to the market.

With respect to the commercial industries of concern in this essay, the solution appeared to be a combination of state cooperation in research and development and the fostering of strategic corporate alliances among private firms. At the level of interstate cooperation, programs like FAST (designed to devise long-term joint research activities), EUREKA and ESPRIT (cooperative activity between private firms and national research institutes for R&D), BRITE (a program to disseminate R&D results), RACE (a program to integrate telecommunications system), and JESSI (a consortium for microelectronics research) proliferated in the 1980s. Although their success was in doubt in the 1990s, the emergence of these programs indicated the beginning of a new understanding among policy elites of the requirements for security under economic interdependence.

At the level of private interaction, particularly in high technology industries where customized production requires direct contacts with end-users, and where converging technologies require firms to integrate a full line of products rather than simply selling a single piece of technology, cooperative efforts have sprung up among European firms.[68]\*\*\* In most of these projects, participants divide market shares between them. There

is, however, some debate over the effectiveness of these latter arrangements. These cartel-like structures clearly suppress competition and, from a classical liberal perspective, the suppression of competition will dampen innovation. Nonetheless, for the smaller countries, economies of scale and the pressures of regional competition seem to require such forms of cooperation. A further problem is that all of these arrangements probably work best within a tight alliance structure. But in a post-Cold war environment, the stability of alliances may be unpredictable. Finally, to the extent that states must give up part of their control over these arrangements, they also give up some of the functional distinctions between them, and their societies may come to recognize that these states must compromise the task of protection from one another.

#### Conclusions

In this chapter, I have attempted to delineate the issues that make up the construction of the new security dilemma under international economic interdependence. In contrast to the traditional assumption that the state's security rests on the threat, use, and control of military force and that military power is an essential ingredient of both state survival and prosperity, I have argued here that resources necessary to military strength increasingly escape the state's control. Efforts to "strike back" and gain control vary with state development, capacity, size, resource distribution, and market power. Most of these efforts, however, are either counterproductive (import and export controls and the concentration of domestic resources on military R&D) or, if potentially successful, are available to only a few states (co-development, co-production, and strategic corporate alliances).

Third world states must continue to import military resources and will be at a disadvantage in trade with those who dominate markets. Nonetheless, their position may have improved with the end of the Cold War and the dissolution of its rigid patron-client relationships. The former Soviet Union has the least control of all in that it has not yet been able to

stabilize the economic forces necessary to either produce resources essential to military strength or gain a market position that would lead it away from dependence on those who would control markets for their own advantage.

This argument, however, has been largely suggestive rather than conclusive. Future research should address the following questions: If economic vulnerability fears persist, what balance of state intervention and the market allocation will allow technological innovation to flourish, yet maintain state control over allocation of resources deemed essential to security? What political and economic structures are compatible with this process? Under what conditions are some states structurally advantaged or disadvantaged in the pursuit of technological innovation in the current world environment?

Such questions might not be the right ones to ask, inasmuch as they continue to be formulated within the traditional assumptions about states as "black boxed" central actors, and "security" as correlated with military power. In light of arguments made here and in the other chapters in this volume, such assumptions may no longer be valid. If such is the case, the framing of concerns and policies about innovation and competitiveness in terms of national security may be more in the nature of "spitting into the wind" than "defending the national interest." Nonetheless, the dominance of this new security dilemma in the political discourse may act to decisively change the way security will be defined in the coming years. In much the same way that nuclear interdependence between the United States and the Soviet Union changed threat expectations and the role of the military in protecting national security, changing economic conditions could lead to a new security "problematique" in international relations.

Three scenarios are possible, each calling for a changing conception of security concerns in a changing international environment. First, with regard to the distribution of capabilities that lead to vulnerability, it is possible that a qualitative leap in innovative capability will give one state

(Japan) or region (the European Community) the status of a new international hegemon. A benign hegemon could provide for the security of its allies, in much the same way that the United States did during the Cold War. A more self-interested hegemon might manipulate and control international markets to enhance its own capabilities at the expense of others. Technology diffusion will enhance the economies of those importers who possess the infrastructure, policy networks, and economic linkages to use imports to strengthen capability. If the argument presented here is correct, many of the problems of hegemony that plagued United States in the Cold War are likely to follow any new hegemon in the post-Cold War period.

This scenario focuses on vulnerabilities and ignores changing threats. The arguments of the "doves," however, suggest that the forces under examination here can weaken threats, even while they exacerbate vulnerabilities. Threat reduction, however, will have both external and internal consequences, with conflicting implications for the construction of security. A second scenario, then, looks to the rise of "trading states" who devote fewer and fewer resources to defense. In this scenario, the policy networks between industry and the military essential to the rapid translation of commercial innovation to military power will wither, reducing vulnerabilities as well as threats. The draining of both threats and vulnerabilities from interstate relations will expand the growth of "republican unions" and "pluralistic security communities" that will reinforce threat reduction, ultimately strengthening the international society of states.

In a third scenario, however, interdependence and the threat reduction it triggers could have internal consequences that expand the power of the state. If central policy makers cannot find external threats, a major source of social mobilization is withheld from the state, and a central basis for its legitimation is weakened. We can understand this process in a more mundane sense when we remember that, in the United States, traditional threat definitions constructed by traditional "hawks" fueled

defense expenditures that, in turn, supported employment and kept political constituencies happy. The story of exaggerated threats and vulnerabilities to expand state power as told in this paper also illustrates this point. In the post-cold war environment, will politicians need to manufacture or find new kinds of threats to maintain their political power?

No matter which of these scenarios is realized, I have suggested here that material changes in the international economy have affected the hopes, fears, and cognitive understandings of the policy elite as they engage in the task of reconstructing the requirements for national security. The third scenario above suggests that a widespread belief in the new security dilemma under international economic interdependence could, ultimately, mean the extension of security concerns and military issues into economic realms far more than has been the case during the period since 1945. This would not necessarily be a positive development. As the story of U.S. economic relations with the Soviet Union suggests, the definition of economic interaction as a security issue gave the state the license to control new areas of social activity and to raise fears of encroachment on constitutional freedoms. And a massive American military establishment built to wage global war against totalitarian regimes will naturally look for a new security agenda to justify its continued existence. Raising the specter of an "economic security dilemma" may be an important part of this strategy. Increasing global economic interdependence has not yet changed the basic assumptions of the national security debate; indeed, it has provided an excuse to expand the range of concerns that are considered "security" issues.

## Endnotes

1. Thanks to Barry Buzan, Dan Deudney, and Ronnie Lipschutz for valuable comments on previous drafts of this paper and to the participants in the project, "Security and the Nation-State" for useful suggestions and criticisms. I also thank John Leslie for expert research assistance and for helping to refine and clarify the arguments presented here. A somewhat different version of this paper appeared in Millennium XX, #xx (xxxx):xxx-xxx.

7. See Walt, "The Renaissance of Security Studies," pp. 211-239, and Joseph S. Nye and Sean Lynn-Jones "International Security Studies: A Report of A Conference on the State of the Field," International Security 12, #4 (DATE): 5-27.

17. This is essentially the argument Waltz makes about Europe just before World War One; see "The Myth of Interdependence," in: Charles Kindleberger, ed., The International Corporation (Cambridge, Mass: MIT Press, 1970), pp. XX-YY.

30. Michael Borrus and John Zysman, "The Highest Stakes: Industrial Competitiveness and National Security," in: Borrus, et. al., The Highest Stakes, pp. xxx-yyy.

39. For a much more wide-ranging argument on the economic sources of Soviet decline see Daniel Deudney and G. John Ikenberry, "The International Sources of Soviet Change," International Security 16, #3 (Winter 1991-92):xxx-yyy, especially pp. 97-104.

44. This argument about dependence was made by Timothy W. Luke, "Technology and Soviet Foreign Trade: On the Political Economy of an Underdeveloped Superpower," International Studies Quarterly, 29 (1985):xxx-yyy.

68. The literature on strategic corporate alliances is growing

rapidly. See, for example, OECD, Technical Cooperation Agreements between Firms (DSTI/SPR 86-20, Paris, 1986); Kenichi Ohmae, Triad Power: The Coming Shape of Global Competition (New York: Free Press, 1985); Harold Perlmutter and D. Heenan, "Cooperate to Compete Globally," Harvard Business Review 86 (March-April 1986):xxx-yyy; and J. Peter Killing, Strategies for Joint Venture Success (New York: Praeger Publishers, 1983).