3 • Status, Norms, and the Proliferation of Conventional Weapons: An Institutional Theory Approach

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Namibia became the world's newest nation today as Africa's last colony celebrated the end of 75 years of South African rule. . . . South African soldiers lowered their country's banner for the final time just after midnight and Namibian troops hoisted the new blue, red and green flag of Namibia to a bugle fanfare. . . . Soldiers of the new Namibian army . . . marched briskly through the stadium to the beat of drums as officers bearing swords barked commands. About 25,000 spectators roared approval.

—Associated Press
March 21, 1991

We cannot be an independent nation without an army of some sort.

—Sylvanus Olympio
president of Togo, 1960–1966

In recent years, significant Third World militarization has become a hallmark of the contemporary international order. Between 1973 and 1989 the total real military expenditures (in 1982 constant dollars) of developing countries increased from $95.3 billion to an estimated $220 billion, while arms imports grew an astounding 1,755 percent. Observing this trend and commenting on militarization in both the developed and the developing world, Peter Wallensteen, Johan Galtung, and Carlos Portales

Although many people have helped us in the course of this work, Victoria Alexander deserves special recognition for substantial effort during the formative period of this essay.

conclude that "ours is the age of militarization... There is no doubt that the military formation is a major part of contemporary society."\(^2\) Although these trends have slowed somewhat in the past few years, they have not abated entirely.\(^3\) And despite the relative slowing of proliferation, the overall magnitude of this arms buildup is in itself noteworthy. But it is the qualitative nature of these new arsenals rather than their growth rate that sets the current trend apart from its historical precursors. Since at least 1957 the global military buildup has been marked by a remarkable proliferation of "advanced" high-technology weaponry in the "developing" world. Today, twenty Third World countries possess or are developing ballistic missiles; at least a dozen are armed with more than a thousand main battle tanks; more than seventy have deployed advanced-capability supersonic fighter aircraft (at present there are approximately twenty thousand military aircraft in the developing world); and a similar number have fielded sophisticated offensive and defensive missile systems. Perhaps better known is the growing concern with weapons of mass destruction. Discussion about the causes and consequences of proliferation of these weapons in the developing world has reached a height not seen since the early atomic age. Regardless of the weapon system examined, however, the concern is the same: well-equipped "state of the art" militaries are no longer restricted to a few industrialized "core" powers; military development and economic development, it seems, have become decoupled.\(^4\)

The primary aim of this essay is to develop and evaluate arguments concerning the spread of advanced conventional weaponry. In particular, the object here is to formulate a more theoretical and empirically tractable analysis of the role of "status" and "norms" in weapons proliferation. Traditionally, "status" or "norm" arguments about weapons proliferation are seldom systematically theorized and, when they are employed, are generally used in an ad hoc manner. Such factors are seen as playing only a residual role in the proliferation of weaponry; typically, "status" is the explanation given for a specific weapons acquisition when the acquisition can be attributed to no other factor. What is more important than the debate over the relative importance of such factors, however, is that "status" and "norm" arguments are seldom formulated in empirically testable ways, and seldom is evidence systematically developed for the role of status and norms in weapons proliferation. Our aim is to address this weakness and thereby to increase our ability to examine patterns of weapons proliferation through the development of a body of ideas that can support a less ad hoc approach.

We begin by reformulating existing arguments about the role of norms and status in weapons proliferation, using a sociological perspective known as institutional theory.\(^5\) Through institutional theory, both weapons proliferation and the broader process of the worldwide spread of professional, technologically oriented military organizations are interpreted as social (and not merely functional or military) phenomena. Weapons proliferation is shaped by the same forces that shape the development of other elements of the modern nation-state.\(^6\) In contrast to this sociological approach, the

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3. Consider, for example, the growth of navies in Southeast Asia and the increasing attention given to submarines by many navies throughout the world.
4. Although the empirical focus of this essay is on "horizontal" proliferation (that is, the spread of weaponry of a given level of technological sophistication across countries), "vertical" proliferation (the development of weapons of increasing levels of technical sophistication) is of equal concern to the authors. The primary aim here is to develop and test general theories useful for understanding the dynamics of both vertical and horizontal proliferation. The choice to evaluate these theories empirically by examining horizontal proliferation in the "Two-Thirds World" is driven by analytical and methodological issues, not by theoretical claims concerning the uniqueness of the "Two-Thirds World" or by political concerns about the unique evils of horizontal proliferation. The research reported here focuses primarily on the determinants of conventional weapons proliferation in the states that won independence in the burst of decolonization following the independence of Ghana in 1957. These ex-colonies began life as newly independent states with, for the most part, only modest military inheritances from their colonial governors. Their militaries were consequently relatively uniform. These states also lacked extensive military production capacities, which required them to acquire weapons from beyond their borders, thus making the estimate of inventory levels somewhat easier. Together, these circumstances allow for the relatively complete tracing of their weapons acquisition histories.
6. Charles Tilly, *Coercion, Capital, and European States* (Cambridge: Blackwell, 1990), pp. 2-3, and others have proposed distinguishing "national states" ("states governing multiple contiguous regions and their cities by means of a centralized, differentiated, and autonomous, structure") from "nation-states" ("states[] whose people share a strong linguistic, religious, and symbolic identity"). This terminology usefully highlights the distinction between ethnic-cultural coherence and political autonomy. The phrase has not yet gained wide currency, however, and in the present discussion the distinction, while useful, is not of central theoretical importance for the processes examined. We therefore use the more common approach of employing "nation-state" to refer broadly to any sovereign entity that possesses territorial integrity and political independence and that enjoys international recognition as the collective representative of a discrete population.
existing literature has exhibited a tendency to treat militaries as unique organizations, to see them as fundamental—indeed, foundational—agents of the state, to take their existence for granted, and to explain their growth and development primarily through reference to technical and security concerns. Such arguments see military strength as the bedrock on which nation-states are built. While these arguments have substantial merit, particularly in explaining the emergence of nation-states and militaries before this century, we shall develop here an alternative perspective, suggesting that modern militaries emerge as part of the more general, world-level cultural processes that have given rise to the modern nation-state.

In brief, we shall argue that militaries no longer build modern nations, but rather, the world political and social system builds modern nation-states, which in turn build modern militaries and procure modern weaponry. While the sociological vocabulary employed in this essay may strike some as a bit jargon-laden, the Namibian example should make the process analyzed herein quite clear. Namibia was brought into being by the modern world political and cultural system: drawing on taken-for-granted cultural models of appropriate political organization, United Nations efforts and the recognition of states throughout the world have constituted Namibia as a “state.” As a symbol of its statehood, the incipient Namibian state created a flag and an army of more than a thousand soldiers. That the army was (and remains) essentially militarily insignificant when compared with those of its possible foes (e.g., South Africa or various armed factions in Angola) is irrelevant to its clearly significant symbolic role.

Standard Explanations for the Proliferation of Weaponry

Three broad arguments are commonly made in efforts to understand the proliferation of the tools of military endeavor. We will label these the superpower manipulation, national security, and factional interest arguments. Each stresses that weapons acquisition and military force structures are the result of rational calculation by actors in the pursuit of their own self-interest. All three of these explanations rest on a single paradigmatic image of human behavior. Described by James G. March as “consequential action” and by Jon Elster as rational choice, this approach sees behavior as guided by the determination of goals (or preferences), the assessment of alternatives available for action, and the mapping of alternatives to goals. Alternatives are selected according to a decision rule—for example, maximize (or satisfy) goal attainment. Superpower manipulation or geopolitical arguments emphasize choice at the level of the major international powers; national security explanations, at the level of the individual nation-state; and factional interest approaches, at the level of subnational interests. Each argument will be briefly reviewed below; each argument leads to a set of at least partially unique empirical predictions concerning influences on the process of weapons proliferation. The particular hypotheses that we will investigate will be summarized after we discuss the three conventional approaches and the institutional theory alternative.

Superpower Manipulation

The proliferation of conventional weaponry and, more broadly, the militarization of the world system may be argued to be primarily the consequence of major power decisions and geopolitical concerns. Regional conflicts are seen as the playing out of superpower conflicts in alternative venues; weapons proliferation is driven not by (local) national needs or internal politics but by the global strategies of the U.S. and the USSR. Superpower or geopolitical theorists differ among themselves with regard to the nature and origins of underlying superpower antagonisms. Thus, some attribute the structure of the international military order to fundamental geostrategic conflicts, while others focus on factional processes within the superpowers themselves and still others highlight action-reaction conflict spirals. For the purposes of this investigation, however, these debates are not central; whatever their view of the dynamics that drive


8. The current Namibian military is approximately eight thousand strong and is in the process of acquiring several small patrol craft. These figures compare with Angolan military forces of approximately forty-five thousand (along with twenty thousand internal security police) and approximately forty thousand UNITA (National Union for the Total Independence of Angola) forces. In 1994, South Africa had armed forces of approximately sixty-seven thousand. The Namibian example, and our assertion of its problematic military utility, is, we realize, suggestive, not conclusive. We include it merely to remind readers of the central symbolic role played by militaries throughout the history of the nation-state, a role that persists even when actual military utility is exceptionally open to question.


superpower policies, all geopolitical approaches concur in their emphasis on the active—indeed overwhelming—role of the superpowers in the militarization of the Third World.

National Security
Underlying most existing research on proliferation is the general assumption that strategic, operational, and tactical analysis governs force structure and weapons procurement decisions. Individual nations design a force structure to meet these needs. Decisions are made on the basis of rationally developed performance criteria and threat assessments, and nations are presumed to select a mix of weaponry that balances military benefits with purchase costs. Described by Graham T. Allison and Fredric Morris as the “prevailing simplification” in the weapons proliferation literature, the approach emphasizes that “weapons are the result of national strategic choice; government leaders select specific weapons and total force posture on the basis of precise calculations about national objectives, perceived threats, and strategic doctrine within the constraints of technology and budget.” While the exact degree of precision in these calculations may be variable, the central argument is nonetheless clear: weapons procurement is driven by security needs.

Factional Interest
Contrasting with theories that focus on the value of weaponry to nations as a whole, factional or political theories view procurement as a reflection of competing internal interests. Thus the acquisition of a particular weapon is the product of a “procurement coalition” shaped by the self-interests of coalition participants. The military clearly is the primary group, with the most direct interest in weapons purchases. Thomas Olshon has suggested that military governments “by embracing doctrines which exaggerate the role of force and military preparedness and equate national development with an expansion of national power, are likely to allocate larger sums to the armed forces than civilian-dominated governments.”

These three perspectives have generated a rich tradition of research in an effort to understand the dynamics underlying this worldwide trend in the post–World War II period. This tradition has produced a theoretically elaborate and frequently fruitful collection of explanatory schema and numerous empirical studies, yet the dominant paradigms seem to have left the research community with a sense that something is missing. For example, Charles H. Anderton has noted:

Much of the empirical arms race modeling literature represents an unsuccessful attempt to find fundamental “lawlike” arms race relationships.... The result has been an extremely large and growing literature... employing the most sophisticated empirical techniques, which has left us rather dry in terms of knowing more about arms races than we would otherwise know.

Despite the dominance of the three perspectives within the arms trade literature, country- and region-level empirical examinations frequently find that these approaches perform poorly as predictors of actual weapons proliferation patterns. Confronting theory with data, observers frequently note the “widespread propensity to procure highly sophisticated, expensive weapon systems and technologies, despite well-known absorption handicaps, and to reject equally serviceable but cheaper and perhaps less sophisticated options that are readily available.”

Explanations offered for this phenomenon tend to emphasize the inadequately rational nature of Third World military decision making rather than the potential inadequacies of the rational explanation. Rodney W. Jones and Steven A. Hildreth, for example, note the “superficial Third World knowledge of particular military systems” and also argue that “developing nations lack the analytical staffs necessary to assess the true military value of weapon tech-

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11. Arguments about the role that procurement coalitions play in acquisition are most fully developed in examinations of American defense procurement; cf. Gordon Adams, The Politics of Defense Contracting: The Iron Triangle (New Brunswick, N.J.: Transaction Books, 1982), for examinations of “iron triangles.” Although some similar work has been done on developing-world procurement processes (e.g., Nichole Ball, Security and Economy in the Third World (Princeton: Princeton University Press, 1988); Stephanie G. Neuman, Defense Planning in Less-Industrialized States (Lexington, Mass.: Lexington Books, 1984)), it has concentrated on the defense planning and procurement processes of a few large states and does not provide the quantitatively oriented researcher with readily available cross-national and longitudinal indicators of procurement coalition power. Thus, despite the desirability of better-theorized arguments concerning Third World procurement coalitions, quantitative work is limited by the relatively crude indicators available.


nologies or to determine how the new weapon can best be employed" and that "less developed countries are often unaware of significant military technologies that are and will be available to them at reasonable cost."16

Robert O'Connell argues that this situation is the "product of a fundamental misunderstanding of the intimate relationship between humans and their armaments."17 Such a misunderstanding is almost inevitable given the tendency in the arms control literature to treat weapons merely as the tools of rationally developed policy; weapons are seen as technology "pure and simple" without independent meaning or significance. Dana Eyre, Mark Suchman, and Victoria Alexander have noted that students of arms control "must acknowledge what has become virtually a truism in other areas of sociology: that technology is never just technology, that every machine has a socially constructed meaning and a socially oriented objective and that the incidence and significance of technological developments can never be fully understood or predicted independently of their social context."18 In this essay we investigate this "intimate relationship between humans and their arms" by identifying and examining factors that affect the adoption of a variety of individual weapon systems (e.g., supersonic aircraft, armored personnel carriers, or APCs) by nation-states in the Cold War period.

An Alternative Perspective: Obligatory Action and an Institutional Theory of Weapons Proliferation

We emphasize the argument that the spread of high-technology weaponry throughout the world is the result of more than rational policy or national security concerns. Reduced (for purposes of explication) to the simplest but strongest possible statement, weapons spread not because of a match between their technical capabilities and national security needs but because of the highly symbolic, normative nature of militias and their weaponry. Weapons have proliferated because of the socially constructed meanings that have become associated with them. Highly technological militias symbolize modernity, efficacy, and independence. Thus the spread of weapons is a process both driven and shaped by institutionalized normative structures linking militaries and their advanced weapons with sovereign status as a nation, with modernization, and with social legitimacy.19 This argument, which can be labeled an "institutionalist" approach to arms transfers, emphasizes the role of world-level cultural models that "press all countries toward common objectives, forms, and practices"20 and that therefore result in a notable degree of isomorphism in structures and practices among nation-states.

Consequential action (which lies at the core of traditional explanations for weapons proliferation) is not the only useful theory of human behavior. While a mythos of rationality may permeate much of Western culture, and the examination of international relations in particular, arguments emphasizing different mechanisms are common within sociology.21 Central to social phenomenology, traditional role theory, and recent institutional approaches in sociology is an alternative perspective that James G. March terms "obligatory action."22

Obligatory action may be contrasted with consequential action. Behavior is explained not in terms of goals, alternatives, and decision rules such as maximization or satisficing (the vocabulary of consequential action) but through an emphasis on roles, norms, accounts (i.e., stories and explanations justifying particular actions) and definitions of appropriate action. Although the vocabulary of the obligatory action perspective may not be a central feature of modern American pop psychological discourse, social scientists should not ignore the value of the perspective. Viewed through the lens of obligatory action, the identity of an actor is profoundly social, and an actor's behavior is explained by the culturally constructed definition of the situation and of appropriate action within the situation. Through the perspective of obligatory action, the behavior of nation-states, and

19. We seek to develop arguments that provide a framework for systematically examining the impact of "normative" or "cultural" processes in the world military system. While we work within a well-established body of sociological thought (cited above), the application of these arguments to the examination of areas traditionally coded as rational theory is new. We do this not in an effort toward an expansive sociological theoretical hegemony but in the spirit of Jon Elster's exposition of the process of "explanation by mechanism" (Nuts and Bolts for the Social Scientist). Elster argues that the first step in social science is the development of a "toolbox" of causal mechanisms, a set of "cogs and wheels" that can be assembled to provide explanations of specific events and facts. We seek not to replace other tools but to develop an alternative set of tools.
21. For a discussion of the myths of rationality in Western culture, see March, "Decision-Making Perspective," and Meyer and Rowen, "Institutionalized Organizations.
22. March, "Decision-Making Perspective."
people, can be seen as similar to the behavior of actors in a play, or players in a game. Their identity is constituted by the social system (for example, the identity of pitcher, or that of wife, is given meaning by the complex of behavioral rules associated with the role), and their behavior is guided by the "script" or the "playbook." Such arguments do not deny that individual actors are thoughtful or strategic; there is room for improvisation and creativity (neither people nor nation-states are mindless followers), but individual behavior is fundamentally shaped by the social structure surrounding the behavior. Indeed, actors themselves are constituted by the social system. Actors (be they organizations, persons, or nation-states) do not have social standing, or the ability to act within a social system, separate from the rules that both construct them and charter their actions. Within such a perspective the key question for understanding behavior is no longer "What are an actor's goals, alternatives, and decision rule?" but "How are roles, accounts, and rituals written, spread, and learned?"

Whatever the explanatory model chosen (consequential or obligatory), it is important not to reify the model. The concrete action of real people (and states) can be explained by alternative models, but the action itself is neither "consequential" nor "obligatory," "rational" nor "irrational"; rather, these ideas are the lenses that the analyst uses to understand action. Indeed, the ultimate purpose of constructing analytically distinct arguments is to enable us to combine these "nuts and bolts" in ways that are useful for the explanation of particular features of social life.

Within organizational theory and political sociology, "obligatory action" arguments are frequently labeled "institutionalist." Such arguments share three central assumptions: First, institutional theory sees society as more than a network of exchange relations and power-balancing efforts. Instead, institutionalists emphasize that the social world is a cultural system, structured by an evolving set of categorical prescriptions and proscriptions that define and delimit appropriate action. Second, institutional theory argues that since these cultural categories are practically taken for granted as lawful, actors rarely subject conforming behaviors to cost-benefit analysis—or do so only ritualistically. 23 In keeping with this outlook, institutionalists explain social life not by postulating goals and interests but by examining the mechanisms through which societal struc-

tures and activities take on a rule-like or ritual status in the minds of participants. Thus, most institutional arguments focus on the ways in which apparently autonomous action reflects "higher-order constraints imposed by socially constructed realities.24 Finally, institutional theory stresses that these normative "definitions of appropriateness" are not static but develop and change over time. Although cultural rules sometimes remain relatively static, this stability is the product of a dynamic process. Cultural definitions do not merely "originate" and then "spread," rather, they should be thought of as in a constant process of evolution, perhaps akin to the process of speciation in the biological world.

Applied to international relations, these three features of institutional theory imply that nation-states are not autonomous, independent actors in pursuit of national interests within anarchy, as realist theories assume. Most important, institutional theory emphasizes the central role of the larger world system in constituting the state as "carrier of collective value and purpose." 25 Indeed, it is this increasingly integrated global system of socially constructed rules that creates and legitimates nation-states as sovereign actors both in domestic affairs and on the international stage. It should be noted that institutional theories bear some similarity to perspectives in political science emphasizing the importance of regimes. 26 Both schools share conceptions of an international cultural or social system, and both emphasize a view of the world as more than an unstructured anarchy. But whereas systemic perspectives view global society as "order-providing"—that is, as a set of enforced constraints on behavior—institutionalist perspectives view the world system as "constitutive"—that is, as a set of fundamental definitions of legitimate actors and appropriate actions. To grossly oversimplify, within the systemic perspective, nations go to war in violation of international norms; within the institutional perspective, nations go to war because that is one of the actions their "charter" as a nation-state allows/instructs them to do. John Keegan, Donald Snow, and Martin Van Creveld offer sociologically informed historical analyses of the impact of social structure on warfare that are sympathetic to this approach. 27


24. Jepsson, "Institutions, Institutional Effects, and Institutionalism."


Empirical examinations at the world-system level have generally emphasized the "remarkable degree of ideological and organizational convergence throughout the world," and most have concentrated on the three substantive areas: welfare systems, educational systems, and conceptions of citizenship. This substantial body of empirical work has focused primarily on establishing the fruitfulness of the institutional perspective and on demonstrating the presence of isomorphism within the world system. Thomas and Lauderdale's examination of the worldwide spread of national welfare programs provides a useful example of work in this tradition. Arguing against the assumption that nation-states adopt and expand welfare programs in response to functional needs (e.g., the argument that states have an unemployment insurance system because they have lots of unemployed workers who are hungry or politically active), the authors posit that "incorporation...into the world system reconstitutes the state as the carrier of collective value and purpose...chartered with the responsibility for 'national welfare.'" Under such circumstances, welfare policies are not predicted by indicators of need; they are instead predicted by the extent of incorporation into the world polity. The basic pattern of the Thomas and Lauderdale study is typical of other institutional efforts, as are the empirical findings. Indicators of incorporation into the world system are found to predict the degree of adherence to international cultural norms chartering state action (here, the existence and extensive-ness of social security programs). In contrast, indices of functional need for state action (for example, the percentage of elderly citizens in the population) fail to predict either the existence or the extent of governmental response. On the basis of these findings, Thomas and Lauderdale conclude that national policies establishing formal welfare programs are "best viewed as rituals of external legitimacy."

As noted above, the institutional approach to the problem of proliferation developed herein will emphasize the role of the symbolic, normative aspects of militaries and weaponry. Frequently, students of arms control recognize the potential significance of the processes described by institutional approaches, although generally employing words like status and prestige. Jones and Hildreth acknowledge that the drive to acquire high-technology weaponry may be a combination of inadequately rational decision-making systems and "a political compulsion to deploy systems as modern or sophisticated as a neighbor has." Ohlson argues that "the armed forces, equipped with as modern weapons as possible, came to be regarded by many governments in the Third World as a symbol of unity and independence and as tangible evidence that the government intended to defend its sovereignty. The actual utility of these weapons...was often of secondary importance."

Examining the structure of European navies, Catherine M. Kelleher, Alden F. Mullins, and Richard C. Eichenberg found that the number of sea control vessels remained remarkably stable across all European states during the period 1960 to 1970. "The effects of constrained resources seem minimal...Destroyers, frigates, corvettes, and (for a few states) carriers all seem to constitute an element of national prestige." Examining the force structures of individual countries, they argued that "in terms of traditional indicators, it seemed logical to predict the Netherlands and Italy would be prime candidates for our 'rational middle power'; yet their present naval profiles show few of the choices we hypothesized for [the model]...It may well be the least powerful middle powers which are most attached to their symbols of 'equality.'" While these findings are not conclusive (indeed, Kelleher, Mullins, and Eichenberg's study is one example of the use of prestige arguments when nothing else seems to fit), they clearly suggest that force structure is influenced by more than domestic politics and rational calculation of strategic need.

Despite apparent compatibility and the potential fruitfulness of an institutional approach to the study of the arms trade, existing examinations have tended to leave these nascent institutional arguments underdeveloped. For their part, institutional theorists have also tended to skip the military in their empirical investigations of the world system. Yet the application of institutional arguments to the study of world militaries

29. For welfare, see Thomas and Lauderdale, "State Authority and National Welfare Programs in the World System Context"; for education, see Francisco O. Ramirez and John Boli, "Global Patterns of Educational Institutionalization" in Thomas et al., Institutional Structure, pp. 150–72. For citizenship, see Francisco O. Ramirez and Yasmin Soysal, "Women's Acquisition of the Franchise: An Event History Analysis" (paper presented at the 1989 annual meeting of the American Sociological Association).
31. Ibid., p. 393.
33. Ohlson, Arms Transfer Limitations and Third World Security, p. 49.
should be uniquely fitting for at least two reasons. First, militarization, from an institutionalist perspective, may be seen not as a unique and especially problematic occurrence (except for the possible consequences) but as merely one additional facet of the larger, global system-wide trend toward isomorphism among nation-states that is the central empirical finding within institutional arguments. Second, failure to examine militaries from an institutionalist perspective is especially odd given the traditional, unique link between armed force and national sovereignty and the institutionalist concern for the construction of the nation-state as an actor. Michael Howard argues that, within the international system, "the military capability of a state is assumed to be [a] major element in its effectiveness as an actor in the international system." This argument suggests that, far from being an aberrant event, the militarization of the Third World is inextricably linked with the extension of the nation-state system and the development of national sovereignty. Thus it can be argued that the developing world is militarized, not because of particular events or forces within or between developing world nation-states but because the developing world is made up of nation-states and one of the defining characteristics of the nation-state is the possession of a modern military.

From an institutional perspective, once a social object (say, a flag or a supersonic aircraft) is established as central to normative definitions of statehood (that is, once "being a nation" means, among other things, "having a flag" and "having a high-tech military"), the critical variable in the determination of acquisition of these objects is not the nation-state's functional requirement for the object but the degree of connection of the nation-state to the world system. In order to understand the "unprecedented proliferation of national flags in the post–World War II period," one does not look at the nation-state's functional need for a flag, or at the behavior of flag manufacturers. To understand flag proliferation, one must understand the cultural system that gives flags their unique meaning for nation-states. A nation-state "acquires" a flag because it is embedded in a normative system that gives the flag meaning. Thus, an institutional argument suggests that the proliferation of conventional weapons is profoundly shaped by an essentially "ritualistic" (in the sense of ritual as encapsulating meaning, not in the more common usage of habitual action devoid of meaning) belief in militaries and modern weaponry as distinguishing emblems of the modern nation-state. It follows that, if procurement results from immersion in such a normative system, then the pace of procurement should vary with the extent of the immersion.

Institutional arguments are able to make comprehensible many otherwise problematic aspects of militaries and weapons proliferation. It is quite common for developing nations to maintain only a single "squadron" of four or five advanced aircraft—too few to offer any substantial strategic or tactical benefits in any but the rarest of circumstances, but enough to constitute a reasonable air show. Similarly, the symbolic nature of weaponry is almost certainly a significant part of the failure of the F-20 export fighter program, which was intended to provide a low-cost, high-reliability jet fighter designed specifically to meet the needs of newly industrialized countries. Despite having the "right stuff," it lacked the legitimating imprimatur of USAF ownership and perished as unsalable. Institutional arguments must be better specified if a fuller understanding of the process is to be gained. Indeed, both Ann Swidler and Connie McNeely have noted that few investigations using institutional arguments have focused on the specification of the mechanisms by which isomorphism is produced; instead, they have focused primarily on establishing the fruitfulness of the institutionalist perspective and the existence of isomorphism within the world sys-


36. Some may object to the comparison of weapons and flags, arguing that flags are purely symbolic and weapons primarily or exclusively functional. We do not disagree with the observation that weapons have functional value. Guns, in fact, can be used to kill people. We do, however, disagree with the assumption that some social objects (e.g., flags) are purely symbolic and also with the a priori assumption that because some social objects (e.g., weapons) have a functional value, functional considerations must necessarily dominate the proliferation of those objects. First, it should be remembered that the actual utility of symbolically significant weaponry, such as a supersonic aircraft, is more often in question than weapons salespeople might acknowledge. This is particularly true in many developing-world strategic and tactical circumstances. Jet fighters, for example, are difficult to maintain and to employ effectively. Second, the a priori assessment of the relative functional value of military weaponry is often dependent on a complex set of assumptions that are themselves as much a cultural theories of war as hard-earned, firsthand lessons of war. As a final complicating factor, the socially constructed nature of a "threat" should also be kept in mind. The nature and magnitude of a threat are shaped by perceptual processes and cultural assumptions, as well as military considerations. Thus, the degree to which a given weapon is seen as "functional" is dependent on threats and assessments of utility, both of which are socially constructed. The symbolic and the functional values of social objects cannot be simply separated or assessed. Carl Von Clausewitz, speaking of what he termed the "physical" and "moral" factors in war, noted: "One might say that the physical seem little more than the wooden hilt, while moral factors are the precious metal, the real weapon, the finely honed blade" (On War, edited and translated by Michael Howard and Peter Paret [Princeton: Princeton University Press, 1984], p. 184). Again, we do not dispute the functionality of weapons. We merely point out that the assessment of "functionality" is more problematic than may be generally acknowledged and that one should begin the study of weapons proliferation with a question, rather than an assumption that one of these two tightly intertwined aspects necessarily dominates.
tem. Although this investigation, which is designed to use institutional theory in a new empirical realm rather than to expand institutional theory, is marked by this limitation, we would now like to explore four directions in which institutional arguments can be developed: greater attention to the structure of the world system; systematic variation in the process of early and late adoption of an object; variation in the degree to which an object is given social meaning (or degree of institutionalization); and variation in the nature of an actor’s identity. Although not all of these arguments will be empirically evaluated here, the effort is useful in the interest of giving a full picture of an institutional approach to proliferation.

**Structure of the World System**

Within the diffusion literature attention is paid both to the nature and degree of connectedness of the potential adopter and to the organization of the social system. Institutional theory relying on empirical investigations have tended to assume an undifferentiated (or simply differentiated, e.g., core-periphery) world system, featuring only variations in the degree of connection of an individual state to the polity. However, Swidler usefully suggests that different “models of stateness may well be promulgated within subcommunities, based on language or colonial heritage, political divisions, etc.” This concern suggests an argument that the proliferation of high-technology weaponry should follow existing channels of international influence and communication. Variations in these channels should predict variations in patterns of weapons proliferation. For example, postcolonial relationships (e.g., the British Commonwealth) or regionally based alliance or cooperation organizations (e.g., the Organization of American States) may foster the development of variant models of stateness.

Few sociological investigations have systematically examined variations in the structure of the world cultural system. Anthony Giddens notes that current conceptions of the “world system” may exaggerate the level of integration of the system. The current world system may, he argues, be better characterized as being made up of a “global information system,” a “nation-state system,” a “world capitalist economy,” and a “world military order.”

“The world system exists,” Giddens notes, but this “does not imply a single dominating dynamic in its development.” We see much value in this approach, and we would point out two major advantages. First, such a differentiated characterization allows for the formulation of arguments about the relationship between these systems, focusing, for example, on the degree to which conformity in one “sector” or “system” (e.g., education or the “global information system,” using a measure of conformity such as that developed by McNeely) predicts conformity in another sector (e.g., the “world military order”). Similarly, it should be possible, following the pattern of earlier institutional theories, to construct an indicator of connection to the world military system, using, for example, the number of military attaches sent abroad or the number of military-related treaties signed. It would then be possible to examine which indicator of connection was a better predictor of institutional conformity; significant improvement with the use of the indicator of connection to the world military system would support Giddens’s arguments. Second, Giddens’s framework implicitly challenges us to assess empirically the uniqueness of the dynamics of the world military system, rather than assuming that it must be dominated by either cultural processes or functional considerations.

**Early/Late Adopters**

Within the literature on institutional arguments at the organizational level, empirical research has “yielded the frequently replicated finding that early adoption (that is, adoption of an innovation soon after its introduction, before a large portion of the population at risk has adopted it) of organizational innovations is strongly predicted by technical or political attributes of adopters but that later diffusion is more poorly predicted by technical or political measures.” Pamela Tolbert and Lynne Zucker find that when civil service reforms are not required by the state, early adoption of civil service by cities is related to internal organizational requirements, with city characteristics predicting adoption, while late adoption is argued to be related to institutional definitions of legitimate structural form; empirically, they find that city characteristics no longer predict adoption.

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41. McNeely, “Cultural Isomorphism Among Nation-States.”
ment may be restated more positively as: early adoption of an innovation will be predicted by "technical characteristics" of the adopter (reflecting the suitability of the innovation as a solution to a problem), while later adoption (after the "institutionalization" of the innovation) will no longer be predicted by technical characteristics and should be predicted by variables reflecting the degree to which the adopter is connected to the social system within which the innovation is institutionalized.

Degree of Institutionalization

If objects, such as flags, become, in Selznick's phrase, "infused with value," or institutionalized, it is reasonable to assume that different objects may vary in the degree to which they do so. A social object can vary in the degree to which it has been given meaning and has become part of, or linked to, a particular "taken for granted" image of social reality. The value given a particular object can vary across social systems. The most obvious example of this process is the value accorded small bits of ribbon. Within the military, these "bits of ribbon" are highly significant and full of meaning. In another social system, they may be mere insignificant and meaningless bits of ribbon. Within the modern world system, where sovereignty, modernity, and independence are the essence of our ideas about the nation-state, some weapons might reasonably be seen as highly institutionalized (or symbolically significant, e.g., supersonic aircraft), while others are less so (e.g., trucks, small arms). A given weapon's symbolic significance is dependent on the degree to which it is linked to cultural ideas and images of the nation-state; highly technological, visible, unique weapons are more effective at symbolizing independence than are mundane, unremarkable weapons. Thus, just as weapons can be thought to vary in technical capacity (e.g., "throw weight"—the capacity of a missile in terms of a weight/distance measure), so also can they be seen as varying in terms of institutional integration or "symbolic throw weight." Weapons that vary in this dimension should follow distinct patterns of diffusion; the diffusion of highly institutionalized weaponry should be influenced by linkage to the larger world system and by processes similar to those that shape the diffusion of other, highly institutionalized elements of the world system. The diffusion of weapons of a minimal degree of institutionalization (labeled by The Economist as "the tools of everyday slaughter") should be influenced primarily by consequential factors, including both strategic requirements and situational constraints.

One significant empirical task for institutional theory is to establish a means of systematically assessing the degree of symbolic significance for social objects. Establishing such a metric is difficult; for our purposes, however, variation in symbolic significance among weapons is relatively clear. Some weapons are commonly seen as highly loaded with meaning. Howard, looking at naval power at the beginning of the twentieth century, notes that "the Battleship was indeed a symbol of national pride and power of a unique kind; one even more appropriate to the industrial age than armies. It embodied at once the technological achievement of that nation as a whole, its world-wide reach and, with its huge guns, immense destructive power. It was a status symbol of universal validity, one which no nation conscious of its destiny could afford to do without." In the post-World War II era, navies have not lost their symbolic significance; the evocative phrase "showing the flag" has not lost meaning, although the vehicles may have changed. Aircraft carriers may have taken pride of place in navies, their symbolic value equaling or exceeding that of battleships of old. Argentine reluctance to employ the aircraft carrier Veinticinco de Mayo in the Falklands war, for instance, suggests that the symbolic significance of the carrier exceeded its military utility. Aircraft have similarly significant roles; the rise of the symbolic significance of aircraft is captured in the contemporaneous labeling of the era from 1950 to 1970 as "the jet age." Although the 1990s are infrequently labeled as the jet age, the symbolic significance of aircraft has not been entirely eliminated. For example, the Slovenian Air Force held an air show in the spring of 1994, despite having fewer than five aircraft.

Actor Identity

So far, world system-level empirical investigations employing institutional theory have tended to assume a single, undifferentiated identity for all nation-states: that of sovereign equals. It is reasonable to suspect, however, that there are variations in this basic identity. Clearly, a "superpower" is more than a mere nation-state; it is, within the military realm, a nation-state that—at a minimum—has nuclear weapons. Some nations (e.g.,

India) have at times seemed actively to aspire to this differentiated status. Similarly, some states seem to aspire to a more local, but still differentiated, status as a "regional power"—for example, Nigeria or Argentina. Discussions of the spread of chemical and biological weapons have frequently featured the label "pariah state." While no state is likely to aspire, or even publicly acknowledge, such a label, labeling theory offers potentially useful insights into the mechanisms through which such socially undesirable labels can shape behavior. Finally, it is reasonable to speculate that "microstates" (e.g., Kiribati, Nauru, St. Kitts, and Nevis) may very well view their identity as something other than a full nation-state.

Thus, some variation in the identity and behavior of nation-states may stem from variations on the basic concept of the nation-state in the world-level cultural model. But while world-level cultural concepts of the nation-state have a profound impact on the formation of specific states, identity as a nation-state is not constituted solely by world-level cultural processes. "Domestic" cultural definitions of nationhood and statehood interact with world-level cultural concepts of the nation-state to form the specific identity of individual nation-states and, in turn, to shape their behavior. Together, these two processes may account for substantial variation in the identity and behavior of individual nation-states. Clearly, the dynamics of identity formation for the nation-state require greater theoretical and empirical work. This discussion is adequate, however, to highlight the point that variations in national identity may shape variations in patterns of weapons acquisition.

**Hypotheses**

Before turning to a summary of the hypotheses to be investigated, we should point out that there are strong reasons to anticipate robust period effects in the proliferation of conventional weaponry. Most qualitative literature on weapons proliferation suggests that the post–World War II era may be marked by three major periods: The immediate postwar and early Cold War period extended through approximately 1968. This period was marked by the relatively restrained aid policies of both superpowers. Weapons transfers were mostly outdated World War II-era equipment; the United States was still transferring World War II-era propeller-driven fighter aircraft to developing countries in the early 1960s. Beginning in the early 1960s and intensifying in the 1970s, the Soviet Union transferred large amounts of relatively "high-tech" equipment to independent and newly independent countries. The United States followed at a lag, and at a relatively reduced rate (with the obvious exception of transfers to a few key states, such as South Vietnam and Israel). This second period continued through the mid-1970s, when the burgeoning oil revenues fostered the development of an increasingly open arms "supermarket." In the third period, arms of increasing sophistication were available to any nation that had the cash, and to many that had only marginal credit. Marked by "let's make a deal" fervor, these black- and gray-market transfers pushed a large volume of weaponry into even the newest and least industrialized states.

The following hypotheses are suggested by the four arguments (superpower, national security, factional interest, institutional theory) reviewed above:

H1. Levels of conventional weaponry will be strongly shaped by patterns of alliance with the United States and the Soviet Union and will be less significantly shaped by local security considerations.

H2. Levels of conventional weaponry will be influenced primarily by the level of strategic military threat directly faced by a nation-state.

H2a. To the degree that national security arguments implicitly discount the role of "status" or "normative" processes or reduce them to residual effects (as described above), they also suggest that indicators of connection to the world system should not be consistently or powerfully related to weapons inventories.

H3. Military regimes will feature a higher level of conventional weaponry than will civilian regimes.

H4: Variation in levels of conventional weaponry will be predicted by variation in the level of connection of a nation-state to the global system. In developing this hypothesis, using the observation made above about variation in level of institutionalization for different weapon systems, we can add:

H4a. Inventory levels of noninstitutionalized weaponry (i.e., that with
low symbolic significance, such as propeller aircraft or armored personnel carriers) will be influenced primarily by processes described by national security arguments.

H4b. Inventory levels of highly institutionalized weaponry (i.e., that with high symbolic significance, such as supersonic aircraft) will be influenced primarily by processes described by institutional arguments. 49

Research Design, Data, and Methods of Analysis

Before proceeding to the details of the data and methods, we will comment briefly on the research design of the empirical investigation. Each of the arguments laid out above makes some claim to the accurate portrayal of some aspect of the growth of Third World militaries. A substantial number of empirical investigations have been conducted, including (1) examinations of broad patterns of international arms transfers, (2) studies of overall military expenditures at the country level, (3) efforts at understanding the growth of overall military capability, through the use of aggregate indicators of military capability, and (4) examinations of arms merchant behavior. 50 However, the dominant forms of empirical investigation have been the country- or region-focused case study and the econometrically flavored examination of levels of military spending. Each has a weakness. Country studies make the recognition of world-level processes difficult, while existing quantitative work, with its focus on single indicators of military expenditure or capability, is, although sophisticated, perhaps too coarse-grained in its choice of dependent variables. Both sorts of analysis run the risk of obscuring potentially important aspects of the actual mechanics of proliferation. Relatively lacking thus far have been efforts to unpack the proliferation process and to conduct large-scale quantitative investigations of the spread of military organizational forms and individual weapon systems throughout the world. The preliminary work reported here is intended to fill this gap. In its more fine-grained view of the proliferation process, it will offer a view of the arms trade that has not been developed in existing studies. By its examination of the proliferation of individual weapon types, this investigation is designed to sharpen our understanding of the processes that drive the proliferation of weaponry in the developing world.

Measures and Indicators—Dependent Variables

Below, we will report results from the examination of a series of ordinary least squares cross-sectional regression models that evaluate the hypotheses discussed above. We have conducted a cross-sectional regression analysis of weapons inventories during the period from 1970 to 1990 (with 1970, 1980, and 1990 as target time points), using country-level weapons inventories (i.e., counts of weapons of various types possessed by a country) as dependent variables. Inventories of military weapons are drawn from a variety of published sources. The most significant are the International Institute for Strategic Studies' The Military Balance, the Stockholm International Peace Research Institute's Arms Trade Registers (covering 1950 to 1973) and Arms Transfers to the Third World (covering 1971 to 1985), and Defense and Foreign Affairs Handbook. 51 The data set used in the analyses reported for 1970, 1980, and 1990 (tables 3.1 and 3.2) for the developing world includes inventories for the states that became independent during the burst of decolonization following the independence of Ghana in 1957 through the mid-1980s. Not included are “microstates,” those states with populations of fewer than about 750,000. 52 The analysis reported in table

49. Here we insert a brief confession of academic unworthiness, in order to reinforce the point we made earlier. The argument that objects that vary in their degree of symbolic significance should exhibit different patterns of diffusion within the world system is a reasonable extension of institutional theory. Developing means of assessing the symbolic significance remains an important task, one that we have not yet tackled. We proceed with this preliminary investigation based on the assumption that “high-tech” weaponry is emblematic of modern militaries and modern states. We believe that this assumption (and our current instantiation of it) is a reasonable starting point for empirical analysis. Moving beyond this assumption, through a theoretically informed, empirical assessment of symbolic significance, is an important future task. We also note, following the comments of one reviewer, that the ability to produce weaponry may also be symbolically significant. We agree and suggest that the arguments we have made would apply, mutatis mutandis.

50. Empirical investigations of the subject (summarized in Mullins, Bora Arming; and Launance, The International Arms Trade) have been conducted, including: (1) examinations of broad patterns of international arms transfers (e.g., Michael Klare, The American Arms Supermarket [Austin: University of Texas Press, 1984]), (2) studies of overall military expenditures at the country level (e.g., Robert E. Looney, Third World Military Expenditure and Arms Production [London: Macmillan, 1988]), (3) efforts at understanding the growth of overall military capability, through the use of aggregate indicators of military capability (e.g., Mullins, Bora Arming).


52. We have chosen this population of states, and not included the microstates, for research design reasons. It can be argued that both acquisition of weaponry and NGO membership are prompted by a third variable, relative importance in world politics. Larger or "leader" states do more of both. This
3.3 covers all non-micro nation-states for which data were available in 1980. For both analyses, individual weapon systems inventories are aggregated into three basic categories: propeller-driven aircraft, supersonic aircraft, and armored personnel carriers. Propeller-driven aircraft include all ground-attack and transportation/utility aircraft in the military inventory, though most in this category are transportation aircraft. Supersonic aircraft include all aircraft in the military inventory identified as having supersonic capability, regardless of role. Armored personnel carriers include all armored vehicles, whether tracked or wheeled, designed for troop transportation. No differentiation is made between vehicles designed to be fought from and vehicles designed solely for transportation. Although these categories are somewhat crude and do not capture wide variations in the performance of weapon systems, they should adequately capture important similarities in the symbolic value of the weapon systems.

Measures and Indicators—Independent Variables

The independent variables used in this analysis are drawn primarily from the Data Bank on Political and Socioeconomic Development available from the Hoover Institution on War, Revolution, and Peace. This data bank provides more than three thousand economic, social, political, and cultural measures for 126 countries for the period 1950 to 1992. The majority of the data are drawn from United Nations or World Bank statistical sources.

Some of the common empirical indicators of connection used in institutional investigations are the nation-state’s number of diplomatic representatives abroad and its number of memberships in international governmental organizations (e.g., United Nations, International Postal Union). The standard practice of most institutional theory empirical investigations is to use the number of international governmental organization (IGO) memberships as the indicator of connectedness to the world system. Strong theoretical and empirical justification exists for the routine use of this variable as an indicator of the degree of connection of a country to the world polity, with more memberships indicating a higher degree of connection.53

Measuring the relative political power of the military within a regime is a difficult task. While a number of somewhat successful efforts have been recorded, they have seldom been done both on a worldwide scale and over a significant period of time. Therefore, as an indicator of type of regime (Regime) we shall use the presence of a military officer as president, prime minister, or head of state. This is coded as a dummy variable and is admittedly a very rough indicator of military power within a government. We undertook a similar effort to examine the impact of authoritarian regimes as a part of the preliminary research effort, but the results paralleled those obtained by using the military regime indicator, and therefore we used the simpler military regime coding in R the final analyses.

Gross national product per capita (GNPpc), as measured in constant 1980 dollars, is used as an indicator of national development.

Obviously, constructing broadly applicable indicators of military threat is a difficult task. Perceived threat is shaped by a wide variety of factors that are unique to each potential conflict situation. Nonetheless, some widely applicable indicators can be identified; these fall into two broad classes, one based on strategic situation or potential threat and the other based on actual conflict experience. The number of bordering countries (Border) serves as a rough indicator of the potential for friction, while the fraction of a country’s history spent at war, measured as the number of years at war as a fraction of years of independence (Years at War), captures a country’s military experience. This indicator (drawn from Kidron and Smith)54 and others include both international/cross-border wars and internal conflicts.55 Geopolitical alignment (Alignment) was used as an indicator of tie to the superpowers. Following Kidron and Smith, the general orientation of countries was assessed as pro-West, nonaligned, or pro-East.56 This repre-

53. For example, see Thomas and Lauderdale, "State Authority and National Welfare Programs in the World System Context."
55. While one might wish for a more individually tailored indicator of perceived threat, the conceptual and practical details involved in creating such an indicator are significant. Nonetheless, we stand by the use of the Years at War variable as a reasonable indicator of threat. Countries with a high level of involvement in warfare probably perceive greater threats than countries with long histories of peace.
sents an assessment of a country's political allegiance and an effort to identify the state's main policy direction. It considers, but is not limited to, formal alliance or friendship pacts. In our preliminary efforts for this study, we used two dichotomous variables, one for alignment with the West, the other for alignment with the East, with "nonaligned" being the reference category. The dummy variable for West was not significant in any of the equations, and removing it from the equations did not alter the parameter estimates or substantive conclusions in any significant way. This does not, of course, mean that the West did not transfer arms to its allies; it means only that Western allies did not receive significantly more or fewer arms, overall, than did nonaligned nations. The West dummy variable is therefore not included in the final analyses. The Alignment variable is coded 0 for nonaligned or aligned with the West or 1 for aligned with the East/Soviet Union. For the examination of the world inventories of supersonic aircraft in 1980, an additional dichotomous variable was included to indicate membership in the industrial core (Core), either East or West, with 0 coded as outside of the core and 1 as a core member.

As appropriate, each variable is also identified by a suffix indicating the year the variable was measured (e.g., 1966 indicates that the variable measures the number of international governmental organizations that a country belonged to in 1966). All dependent variables are measured in the year of the equation. Selection of appropriate lag times for independent variables is always a significant issue; however, for these analyses, variations in lag affected the relative significance of variables only modestly; for this investigation, a standard one-year lag was selected for purposes of simplicity. The exceptions to this are the 1966 variables, which were available only for the years 1966, 1977, and 1982. This introduces an exceptionally long lag for the 1966 variable in the 1990 equations, which should be expected therefore to attenuate the impact of the 1966 variable on 1990 inventories.

Results

The three tables included in this essay present the results of a series of regression analyses. Table 3.1 covers analyses of weapons inventories of the newly independent states in 1980, Table 3.2 examines analyses of weapons inventories of the newly independent states in 1990, and Table 3.3 presents results of a regression analysis for inventories of supersonic aircraft for the entire world (again, minus microstates of under 750,000 popula-

\textbf{Table 3.1}

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Supersonic Aircraft</th>
<th>Propeller Aircraft</th>
<th>Personnel Carriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>57</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>R^2</td>
<td>.360</td>
<td>.360</td>
<td>.304</td>
</tr>
<tr>
<td>Years of War</td>
<td>.323**</td>
<td>.465**</td>
<td>.322**</td>
</tr>
<tr>
<td>Border</td>
<td>-.141</td>
<td>.325</td>
<td>-.145</td>
</tr>
<tr>
<td>IGO77</td>
<td>.390***</td>
<td>.079</td>
<td>.244**</td>
</tr>
<tr>
<td>CNPPC79</td>
<td>.101</td>
<td>.034</td>
<td>.130</td>
</tr>
<tr>
<td>Regime</td>
<td>.120</td>
<td>-.120</td>
<td>.210</td>
</tr>
<tr>
<td>Alignment</td>
<td>.355**</td>
<td>-.308**</td>
<td>.276*</td>
</tr>
</tbody>
</table>

Table shows standardized coefficient, with p values identified as follows:

*** = less than .01
** = less than .05
* = less than .1
finding that should be noted concerns the R² for the equations. Overall, the models fit the data reasonably well, with the 1990 equations seeming to fit slightly better on average. In both sets of equations, the Years at War variable is consistently significant and positive. In most of the equations it also has the largest standardized coefficient. The second threat indicator, Border, is not significant in any of the equations. Regime is also not significant in any equation. IGO is significant in five of the six equations in the 1980 and 1990 analyses; the only equation in which it is not significant is the 1980 propeller aircraft equation. Gross national product per capita (GNPPC) is not significant in any equation in the 1980 analysis but is significant in the supersonic aircraft and armored personnel carrier equations in the 1990 analysis. Finally, the Alignment variable is significant and positive in four of the six equations, significant and negative in the propeller aircraft 1980 equation, and not significant and negative in the 1990 propeller aircraft equation. In the 1980 world equation (table 3.3) we see a very similar pattern, with the Years at War, IGO, GNPPC, and Alignment variables positive and significant.

Comparing the findings with the hypotheses, we see first that the national security argument is strongly supported by the consistent positive effect of Years at War. In conjunction with the lack of significant effects by the Border variable, this result strongly suggests that countries should pay attention to their histories of conflict, and not to more abstract indicators of potential conflict, when making weapons acquisition decisions. In contrast with “hard” national security arguments, however, which tend to

employ cultural arguments as ad hoc explanations for idiosyncratic cases, the second notable finding is the consistent relationship between international governmental organization membership (IGO) and the number of weapons possessed by a country. This finding provides substantively significant support for institutionalist arguments. Indeed, it appears that international organizational membership is significantly related not merely to those weapons that were seen as highly symbolically significant (supersonic aircraft) but also to weapons that were seen as of lesser symbolic significance (armored personnel carriers). This finding can be interpreted as supporting a “strong” institutionalist argument. That is, at least for newly independent states, possession of any of the trappings of a modern military may be of symbolic significance.57 It should be noted that the significance of the Years at War variable does not directly challenge institutionalist arguments, which do not deny the significance of functional factors. Rather, institutional arguments point out that functional requirements are responded to in socially structured ways: modern militaries are seen as the appropriate response to war (rather than other possible responses, including target hardening, civilian- or reserve-based defense, or prayer) because of the highly institutionalized linkage between the nation-state and the military.

The second major issue raised by these results concerns the assessment of the symbolical significance of various weapons. For our purposes, an a priori assumption was made: jets, supersonic aircraft, main battle tanks,

| TABLE 3.2 |
|------------------|------------------|------------------|------------------|
| Regression Results, Newly Independent States, Year =1990 | Supersonic | Propeller | Personnel |
| Variable         | Aircraft | Carriers | Aircraft | Carriers |
| n                | 57       | 57       | 57       | 57       |
| R²               | .461     | .362     | .435     | .435     |
| Years of War     | .406***  | .465**   | .390***  | .390***  |
| Border           | .042     | .064     | .036     | .036     |
| IGO82            | .210*    | .331**   | .200*    | .200*    |
| GNPPC89          | .288**   | .059     | .533***  | .533***  |
| Regime           | .133     | .050     | .178     | .178     |
| Alignment        | .426***  | -.060    | .212*    | .212*    |

Table shows standardized coefficients, with p values identified as follows:

* * less than .1
* * * less than .05
* * * * less than .01

57. Our logic in making this assertion is as follows: Previous institutionalist empirical investigations (as noted above) have consistently found that IGO membership predicts adherence to world cultural models of statehood. The statement "the more a nation-state is connected to the larger world system, the more it follows the established cultural model of statehood" is strongly supported by empirical evidence (cf. Thomas et al., Institutional Structure). We have extended institutional theory through our arguments that social practices may vary in degree of institutionalization and that these variations should affect patterns of diffusion. In order to conduct a preliminary empirical evaluation of this extension, we have made an analytically necessary assumption: that supersonic aircraft have more symbolic significance than armored personnel carriers and propeller aircraft. As is often the case, the results were mixed. In 1980, IGO82 was significant in the equations for supersonic aircraft and personnel carriers but not in the equation of propeller aircraft. IGO82 was significant in all of the equations for 1990. These results can be interpreted as (a) disconfirming our extension of institutional theory, (b) disconfirming institutional arguments in general, or (c) disconfirming our analytic assumption but being generally in accord with institutional theory. We have chosen (c) because the overall pattern of our results strongly resembles patterns of results in other institutionalist investigations and because we realize that our initial analytic assumption is just that, an initial assumption. It is grounded in a plausible argument, but it remains an auxiliary assumption rather than a theoretically justified, empirically assessed position. Mechanization, it is equally plausible to argue, may be symbolically equivalent (for armies) to high-performance aircraft (for air forces).
and (for later analysis) large naval vessels were assumed to be weapons of high symbolic significance. The results discussed above, and conversations with foreign military trainers, have suggested that many elements of the modern military system may have substantial symbolic significance. Devising a means for systematically assessing the symbolic significance of weaponry remains an important task. The level of technological sophistication involved in a weapon system is clearly one variable that contributes to symbolic value. But the visibility of a weapon may also have much to do with its symbolic value. We are currently proceeding with a study on demonstration effects by examining the proliferation of Exocet missiles after the Falkland Islands war. The results of this preliminary empirical work make it clear that development of a theoretically justified assessment of symbolic significance is a central research task.

The lack of significance of the Regime variable is interesting but not inexcusable. Military regimes may indeed spend more on military budgets and not buy more military hardware. Budgets may very well go to salaries and personal comfort rather than to organizational capability. While we cannot discount the possibility that military power within the nation-state may more profoundly shape procurement patterns—although the effect may be masked by the admittedly crude measure of military power—we can with some safety assume that this effect is not the primary motor driving weapons proliferation.

The Alignment variable shows that a strong connection to the Soviet Union has a substantial impact on force structure: the average state connected to the Soviet Union in 1980 had approximately twelve more supersonic aircraft and one hundred more armored personnel carriers than the average nonaligned/West-aligned state. In 1990 the effect was similar: aligned states had approximately twenty-five more supersonic aircraft and ninety more armored personnel carriers than the reference group. The negative effect of alignment in the propeller equation is interesting. The average Soviet-aligned state has about six fewer propeller aircraft than the reference group. This result may reflect a propensity on the part of the Soviet Union to transfer helicopters rather than propeller aircraft: in equations (not reported in the tables) for helicopter inventories, the alignment variable is positive and significant, with the average aligned state having five to six more helicopters. Again, it should be noted that the absence of an effect for alignment with the West does not mean lack of Western transfers; it suggests instead a lack of differentiation in Western transfers.

The pattern of significance for the GNPPC variable is interesting. Although insignificant in the 1980 emerging-nation equations, it is significant and positive in two of the three 1990 emerging-nation equations and in the 1980 world equations as well. This outcome may reflect the dynamics of an aggressive marketing effort by major suppliers in the middle period of the arms supermarket. During this rather frenzied time, suppliers may very well have hung out signs that said, in effect, “Credit is no object. Your good name (as a country) is your credit.” Certainly this effect was seen in bank loan patterns, as the credit-refinancing crunch of the late 1980s demonstrated. The 1990 equations may reflect the impact of this tightening credit, with propeller aircraft (which have much broader utility and generally much cheaper prices) the only exception.

Before closing, we should review the significance of the 1980 world equation. The world equation includes 138 nation-states, all the countries of the world except for the microstates. The Core variable has a significant effect, and core nations have more supersonic aircraft than noncore nations, but the effects of other variables in the equation are similar to their effects in the developing-world equations. This outcome suggests that the effect captured by the IGO variable is relatively robust and is not unique to the developing world or to the formation of new militaries in newly independent states.

In this essay we have tried to do two things. First, we have summarized a theoretical approach capable of moving beyond the ad hoc nature of existing arguments about the role of status and norms in weapons proliferation.

<table>
<thead>
<tr>
<th>Table 3.3</th>
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<tbody>
<tr>
<td>Regression Results, World, Year = 1980</td>
</tr>
<tr>
<td>Dependent Variable</td>
</tr>
<tr>
<td>n</td>
</tr>
<tr>
<td>$R^2$</td>
</tr>
<tr>
<td>Log Years of War</td>
</tr>
<tr>
<td>Border</td>
</tr>
<tr>
<td>IGO77</td>
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<tr>
<td>GNPPC79</td>
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<tr>
<td>Regime</td>
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<tr>
<td>Alignment</td>
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<tr>
<td>Core</td>
</tr>
</tbody>
</table>

Table shows standardized coefficient, with p values identified as follows:
*** = less than .01
** = less than .05
* = less than .1
Institutional theory provides a vocabulary and a research tradition comparable in sophistication and structure to existing theoretical approaches to weapons proliferation. Second, we have conducted a preliminary empirical investigation employing these arguments. We have argued that the acquisition of modern weaponry, like the acquisition of a flag, is at least in part a product of world-level cultural definitions of the modern nation-state. The results reviewed above provide some modest, tentative support for our arguments. The theoretical structure of institutional theory, the empirical research informed by it in other substantive areas, and the initial empirical results presented here suggest that institutional theory offers significant insights into the process of weapons proliferation.

In the remainder of this essay we would like to look beyond our initial results and discuss directions for further work. We suggest that this effort be approached not as a process of adjudication, pitting theory against theory in some intellectual version of a World Wrestling Federation loser-leaves-town-winner-takes-all grudge match, but as a process of dialogue, framing more-sophisticated and nuanced arguments in order to capture important variations in social processes. Weapons proliferation is a complex phenomenon that is unlikely to be explained fully by any single theoretical vocabulary. Theoretical rivalry serves understanding only if it later builds to theoretical synthesis. We have elsewhere laid out suggestions for this process. Here we wish to focus our attention on the development of institutional theory and empirical analysis.

As a first step, we note that the arguments we have laid out have not specified the mechanisms of influence upon which institutional processes are dependent. How is it that world-level cultural models shape the acquisition behaviors of particular nation-states? Full explication of these mechanisms is beyond the scope of this essay; it is, however, possible at least to suggest some mechanisms that may serve to carry cultural expectations into the nation-state.

Institutional theory has attended to this issue. When examining the growth and development of the nation-state, institutional theory has primarily emphasized the role of international organizations as 'teachers of norms.' For example, McNeely notes that international organizations such as the UN serve to convey a wide variety of expectations to member states, and Finnemore also traces the powerful role played by UNESCO in the establishment of national science policy boards. But this organizational- or regime-based mechanism is clearly absent in the world military system. With the exception of NATO and the Warsaw Pact, the world military system has no formal international organization or regime with a significant standardizing effect. Thus, while the International Organization for Lappish Culture and Reindeer Husbandry may have the effect of standardizing the forms and practices of reindeer husbandry, no similar organization exists to account for similarity of form and practice in modern military organizations.

Institutional theory, however, when examining the role of cultural processes at the organizational level, has emphasized an additional set of cultural carriers. At this level the role of professional processes in both the emergence and the spread of organizational forms is significant. For example, Meyer and others examine the role of professional processes in educational organizations, Scott looks at these processes in mental health organizations, and DiMaggio examines the construction and spread of the modern American art museum.

While the exact role of professional processes in the emergence and spread of organizational forms varies in each case, all share a common set of elements, including the development of a unique professional identity, the development of a theorized body of knowledge, the development of professional organizations, increases in the density of intraorganizational contacts between professionals, increases in the flow of organization, and the emergence of a collective definition of the field. Students of military sociology and civil-military relations will recognize that this is the story of the development of the professional officer corps in the early modern era. But while the story of the emergence of the professional officer within the

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62. DiMaggio, "Constructing an Organizational Field as a Professional Project."
nation-state is familiar, the story of the development of transnational connections within the military profession is less well known.

Our study of this process is in the early stages, but it is sufficiently well developed to outline these linkages. There are at least two key sets of linkages between military professionals that cross national boundaries. The first is the exchange of liaison officers and observers and the development of exchange officers in military schools. While this process has been carried out between developed nations at a relatively modest pace for at least a hundred years, the international exchange of officers has picked up substantially in the post–World War II era. For example, the United States Army's Command and General Staff College usually has students from some fifty to sixty nations attending its courses in any given year. Attendance at military schools in the developed world is very common for military officers from the developing world; indeed, even during the Cold War some Third World officers had the no doubt stimulating and unusual experience of attending both American and Soviet, or American and Chinese, military courses.

The second major set of linkages is the development of an international defense literature. While some of this material is the product of official defense establishments (for example, some U.S. Army professional journals have Spanish editions), the largest part of it is of commercial origin. Jane's Defense Weekly, Aviation Week and Space Technology, and Flight are but a few examples of this substantial body of literature. Thus, to a degree that may be unexpected by those who assume that security considerations restrict the flow of defense information across borders, the military profession is marked internationally by many of the same features that other professions exhibit. It seems therefore that many of the same carriers responsible for the transmission of cultural definitions of appropriate behavior in other organizational sectors are also present within the military sector.

Empirical investigation of these arguments needs to proceed along several lines. Along with the development of more sophisticated quantitative indicators of critical concepts, quantitative work needs to be done employing more sophisticated techniques, such as event history analysis and sequence analysis. Case study methods also promise insight into the processes described by institutional theory. In particular, case studies offer the ability to assess the degree and nature of connection between states and the larger world culture. The utility of the case study is not unlimited, however. Case studies of individual weapons acquisition processes by individual countries fall victim to the problem noted above: myopic focus on individual cases means that world-level processes are seen only as distant blurs, if at all.

In summary, we have reviewed thinking about the role of status and norms in the proliferation of weaponry. Using institutional theory, we have reformulated these arguments in a way that allows for quantitative empirical evaluation, and, briefly, we have suggested some mechanisms through which cultural models may be transmitted. The results of this effort offer substantial insight into the role of normative processes in weapons proliferation. Norms, we suggest, do not directly cause the acquisition of a particular weapon. Nation-states do not buy particular weapons exclusively to enhance their prestige. Rather, the creation of a military and the acquisition of the basic "tools of the trade" both confer and confirm the central cultural construct of "statehood" within the modern world system. The more a nation interacts with this larger cultural environment, the more it tends to assert and authenticate its sovereign status with the ultimate symbol of nationhood, a military.

New Directions in World Politics

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The Culture of National Security:
Norms and Identity in World Politics

Edited by
Peter J. Katzenstein

Columbia University Press
New York