

STABILITY AND INSTABILITY IN THIRD WORLD SECURITY COMPLEXES: THE ROLE OF ARMS TRANSFERS

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Controversy surrounds the alleged effects of foreign arms transfers on belligerency: do they precipitate international conflict, as some critics suggest, or do they promote stability by reinforcing deterrence, as others maintain? This paper examines the connection between arms transfers to the Third World and the occurrence of interstate conflict, including militarized disputes, from the end of World War II until the early 1990s. My analysis indicates that, in the aggregate, arms transfers almost uniformly contributed to subsequent instability within security complexes located in various regions of the Third World, but that the effects of American versus Russian arms supplies often appear incongruous. Although a structural realist interpretation fails to account for these findings, a traditional realist perspective – one that emphasizes the different implications of foreign policies oriented to defend or to oppose the international and regional status quo – offers a more promising explanation.

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STABILITY AND INSTABILITY IN THIRD WORLD SECURITY COMPLEXES: THE ROLE OF ARMS TRANSFERS

Developed nations supplied hundreds of billions of dollars worth of armaments to the Third World during the half century that followed World War II. The United States and the Soviet Union provided most of this equipment, primarily to members of their respective cold war blocs. Questions remain as to the effects upon regional stability and instability. The U.S. Mutual Defense Assistance Act (1949), the basis for most American activity in this domain, claimed “to promote peace and security in furtherance of the purposes of the Charter of the United Nations.” Critical observers frequently assert that arms transfers exacerbate frequent and widespread conflict in the Third World. The issue concerns the symbolic and strategic dimension of military might as much as mere physical capabilities to wage war. It also involves suppliers as well as recipients, their relationships, and the structure of global and regional systems.

Disagreement about arms transfers is related to unresolved disputes about the consequences of standing arms generally within world politics. Pacifists and other strong voices for disarmament emphasize the danger of arms races and war inherent in military acquisitions. Proponents of *realpolitik*, on the other hand, emphasize the possibility of peace and stability through armed deterrence. The general argument takes further sustenance from remembered events that seem to point in opposite directions. World War II is often blamed in part upon disarmament among Western powers, which denied them the means to deter and undermined their will to counter early evidence of German and other Axis aggression. World War I, however, is often blamed in part upon prior build-up of the

national armies and navies of Europe's great powers.

Uncertainty about the likely effects of arms transfers owes to the contradictory tactical and strategic implications that arms in general and arms transfers in particular may carry for prudent statesmen. Whether a given transfer of weaponry enhances peace or foments military conflict depends upon which of several paths individual states subsequently follow. In terms of tactical considerations, including estimated readiness for specific military tasks, new arms shipments often enhance, and seldom if ever diminish confidence and ability to undertake military operations. Arms imports therefore tend to reduce tactical inhibitions and expand perceived opportunities to employ military force. To the extent that statesmen act upon such considerations, recipients of arms transfers are likely to resort to force more often than would otherwise be the case.

Arms transfers also influence strategic calculations in several ways, among recipient states and among others with whom they interact. Recipients may be more inclined to resort to force if they imagine that others will be awed by their arms acquisitions and less likely to resist. Recipients who believe suppliers will support their military ventures may be especially belligerent. On the other hand, tending in the opposite direction, new arms usually enhance recipients' confidence in their military capabilities. This may license recipients to postpone military action in response to provocations by other parties, at least temporarily, despite fear that delay risks greater danger to their interests. Supplier caution may contribute further to self-restraint.

At the same time, arms transfers often send mixed messages to other parties with whom recipients interact and so affect the outcome of strategic encounters. On the one hand, enhanced capabilities of the recipient may deter hostile military action by rivals; they may also forestall supporting

intervention by friends who believe that the recipient can take care of itself. On the other hand, new arms may trigger preemptive aggression by rivals who fear that the recipient will act at once to exercise its momentary tactical advantage or that military balance will shift further in the recipient's favor in the future.

Whether a given arms transfer will instigate or deter violence is therefore problematic. The transfer of arms triggers a complicated dance of behaviors and expectations among all interested parties, including recipients, rivals, allies, suppliers and other interested observers. It follows that all arms transfers are not necessarily equal. Among other things, the types of weaponry involved, the strategic situation of the recipient, the policy stance of the supplier, and the relationship between supplier and client each affect the political and military consequences of arms. In addition, strategic complexity implies that the effect of arms upon regional stability may appear to be incommensurate with visible effects upon the behavior of recipient states. For example, it is possible that in some instances arms will incite the recipient state to violence but pacify other interested parties such that the cumulative effect upon the region as a whole appears to be neutral. In short, the logic that can account for the foreign policy behavior associated with arms provided to a single state, whether by that state or its opponents, does not appear sufficient to account for the aggregate effects of arms injected into a region.

This paper examines consequences of arms transfers for regional stability in the Third World during the period from 1948 to 1994. After reviewing some of the recent literature on the topic, I discuss Barry Buzan's (1991) conception of a regional security complex, a unit of analysis I find particularly promising for Third World security studies when one wishes to approach questions from a systemic perspective. I then report results from statistical analyses of five security complexes – South

America, Southern Africa, South Asia, Southeast Asia, and the Middle East – while highlighting some incongruous findings in regard to American and Russian arms transfers. In the conclusion I try to make some sense of these findings in the light of realist international relations theory, and further speculate on the implications of my results for regional cooperation in the post-cold war era.

ARMS AND CONFLICT: THE CONVENTIONAL WISDOM

The conventional wisdom on the impact of arms transfers on regional conflict is that there is no conventional wisdom. That is to say, specialists in this area recognize, quite rightly, that factors driving state leaders to resort to military conflict as a means of redressing grievances, or even factors prompting them to stumble into military conflict unintentionally, are complex and multifaceted. Any monocausal argument, whether it highlights arms supplies or some other factor, is likely to prove incomplete at the very best. Add to this questions regarding the role of arms transfers on the course of military hostilities once begun, as well as the bargaining process leading to a settlement, and the issues confronting the empirical analysis of even a single historical case become that much more numerous and complex.

There is, however, a certain inclination among scholars writing about Third World security, who tend to emphasize “its harmful consequences, particularly for the Third World, where most exported weapons end up and where war and poverty are perennial curses which, while not solely the products of the arms trade, are certainly aggravated by it” (Menon 1986, 59). Ross (1990, 22), for instance, states that “while arms, whether domestically produced or imported, do not inevitably lead to military conflict, they exacerbate existing tensions and contribute to the perceptions and misperceptions that lead to war.” Others, like Ayoob (1995, 102), have put forth similar arguments: “whereas weapons

transfers even on such a large scale should not be seen as substituting for the root causes on conflict inherent in Third World historical situations, the relatively easy availability of sophisticated weaponry certainly contributed to regional arms races and to the escalation and prolongation of conflicts in the Third World.” It is no surprise, then, that scholars who study the arms trade and the transfer of military technology would also like to see it curbed. “If current patterns persist,” writes Klare (1990, 13), “many Third World areas will become increasingly militarized in the years ahead, in all likelihood producing a corresponding increase in the frequency and intensity of internal and regional conflicts.”

Some of the most careful empirical work on the subject has been conducted by Frederic Pearson and his colleagues. In focused chronologies of six interstate conflicts in Africa, Pearson, Baumann, and Bardos (1989) compared the timing of arms transfers with changing levels of fighting and progress during settlement talks. They did not find that arms transfers closely preceded crisis escalation or intensified fighting, but rather that arms flows increased only after conflicts were well underway. Nor were peace negotiations significantly affected by the arrival of weapons shipments. However, they did find an association between weapons agreements (often in the context of friendship treaties) and increased risk taking by the recipient, suggesting that the security commitments implied by arms deals may have more of an impact on the onset of conflict than actual arms deliveries. But in an expanded study covering multiple regions, Brzoska and Pearson (1994, 214, 215) concluded that “arms deliveries clearly were a factor in decisions to go to war, because of considerations about military superiority, perceptions of changes in the balance of power, and interest in establishing links with supporting states” and that “arms deliveries during wars generally prolonged and intensified the fighting” (see also Pearson, Brzoska, and Crantz 1992).

The commonly held view that arms transfers are partly to blame for the frequency, duration, and severity of armed conflict in the Third World does withstand close empirical scrutiny in many cases. This finding has motivated a number of other researchers to explore the robustness and generalizability of the association between arms transfers and conflict using statistical techniques, given that quantitative data on both are available for most countries. Although statistical studies of war and lesser forms of international conflict often span two or more centuries, inquiries into the role of arms transfers tend to concentrate on the post-World War II period. The global arms trade expanded rapidly during this time, especially to accommodate the perceived security requirements of many newly independent states, and so did the incidence of armed military conflict between states (Maoz 1989). Data collection has been motivated in most instances by the desire for a more systematic understanding of (and ultimately control over) these destructive forces, so quantitative data on the arms trade are fairly rich for the postwar years. One can now find in the literature statistical estimates of the correlation between arms transfers and interstate violence at various levels of analysis, ranging from the international system as a whole to the interaction between a particular pair of states. As with the case-study literature, the results of these studies are not always unambiguous, and our cumulative understanding is probably well short of satisfactory, but the empirical results reported in the quantitative literature have been compelling enough to sustain continued interest in this analytical approach to the problem.¹

¹ The first wave of interest in using quantitative analysis to assess the impact of arms transfers on interstate conflict occurred in the late 1970s and early 1980s, motivated at least in part by the rethinking of arms transfers as a tool of American foreign policy that grew out of the Carter administration's general emphasis on human rights (see Spear 1995). The literature is reviewed in Gerner (1983) and is well represented in the special issue of *International Interactions* in which Gerner's review appears. See especially articles by Schrodtt (1983), Baugh and Squires (1983), and Sherwin (1983).

A recent quantitative study by Cassady Craft (1999) examines the relationship between arms transfers and military conflict at the global level of analysis. Based on data covering the 1950-1992 period, Craft reports positive correlations between the total value of arms transferred between all states in the international system and the number of wars erupting in subsequent years, as well as the number of states involved in war. Although the implications of these findings seem to be, at first glance, rather obvious, when Craft takes a closer look at the behavior of arms recipients – as opposed to the incidence of war in the international system, whether undertaken by major arms importers, minor importers, or states largely self-sufficient in arms production – his findings temper those initial conclusions. There is only a very weak association between arms imports and recipients' involvement in warfare, even among importers with higher-than-average propensities to be engaged in military conflict due to unresolved grievances with neighboring states. Furthermore, Craft found no relationship at all between weapons transfers and the duration of the wars that recipients became involved in, or the number of casualties produced by those wars. In view of these findings, Craft (1999, 75) acknowledges the element of truth in common rejoinder to arms controllers that “weapons don’t make wars, men do.”²

The quantitative results reported by William Durch (2000) exhibit similar patterns and lead to similar conclusions. He finds a strong positive correlation between the total value of arms transfers to the developing world and the number of states involved in external conflict, but this relationship weakens or

² The arms controllers' case is resuscitated to some extent in a follow-up analysis of the relationship between arms transfers, this time measured in terms of their military effectiveness, and subsequent wars involving 11 neighboring states (with 10 non-warring pairs included as a control group). While there is no correlation between arms transfers and the duration of wars or their casualty levels, there is a positive correlation between transfers and the outbreak of armed conflict. See Craft (1999), chap. 4.

disappears when the focus shifts from the developing world as an aggregate to the behavior of arms recipients. In delving further, Durch sets aside the dollar-valued arms data in favor of tallies of the number of systems delivered in various “heavy weapon” categories (combat aircraft, missile launchers, missile-armed helicopters, medium and heavy tanks, etc.), introduces controls for past conflict and regional locale, and combines the data into five-year aggregates beginning in 1970 and ending in 1995. After careful statistical analysis, Durch (2000, 104) concludes that “conflict per se is not an adequate explanation for the arms trade, nor is the arms trade an adequate explanation for conflict within and among developing states.”

Other researchers have approached the question of arms transfers and instability by examining the political and military relations between particular pairs of states over time. Even if more aggregated analyses of the type conducted by Craft (1999) and Durch (2000) reveal at best weak associations between arms transfers and military conflict, the connection may still be strong in certain instances and we would like to know at what point the generalizability of such findings breaks down. This is the same reasoning that led Pearson and his colleagues to examine individual military conflicts between major arms recipients, albeit through the use of focused case studies of the periods immediately before and during these conflicts rather than through the use of quantitative analysis (e.g., Brzoska and Pearson 1994). But, in effect, time series analyses of arms flows to rival states are the quantitative analogs of these qualitative case studies.

Gregory Sanjian, for instance, has constructed formal models of cold war arm transfers to rival states (using fuzzy sets) that correspond rather well to the time series data. Refining and extending his analyses in two previous papers, Sanjian (1999) presents and evaluates two competing models. His

instability model treats conflictual political relations between two rivals as an increasing function of their arms supply relationships with the superpowers (as well as third parties), and cooperative political relations between them as a decreasing function of arms supplies. His stability model does the reverse. The empirical results for three different interstate rivalries – India-Pakistan, Iran-Iraq, and Ethiopia-Somalia – consistently support the instability rather than the stability model. “The Superpowers were not agents of progress,” he concludes; “arms transfers may be added to the list of endogenous factors that do not ameliorate rivalries” (Sanjian 1999, 668; see also Sanjian 1995, 1998).

With a few exceptions, the quantitative literature generally does not distinguish the impact of American versus Soviet arms transfers during the cold war. Sanjian (1999), for example, reports some distinctive results for third party transfers, but his models treat the outcomes of arms supply relationships with the two superpowers as symmetrical. Some of my own research, however, does point to differences. In particular, in previous work I have found that where the superpowers’ arms-supply relationships did affect regional security in distinct ways – for example, in relations between the Arab states and Israel or between Iraq and Iran – Soviet transfers were associated with increased levels of regional conflict initiation, but American transfers were not (Kinsella 1994, 1995; Kinsella and Tillema 1995). Compared to these studies, the empirical results I report in this paper are broader in scope, drawn from several regions in the Third World and covering a somewhat longer time frame. The results are not free of ambiguities, but there is some continuity with these earlier findings. Of course, whatever the evidence, a conclusion that highlights the malign effects of only the other guy’s arms supplies smacks of the sort of cold-warrior mentality one might have encountered (or still encounter) in the corridors of American government and industry. But there is also some basis for such a conclusion to be found in

international relations theory, albeit in the realist school of thought most compatible with American cold war policymaking.

SECURITY COMPLEXES IN THE THIRD WORLD

Much of the theoretical and quantitative empirical work on international conflict and stability has taken place at highly aggregated level of analysis. The neorealist tradition, for example, gave rise to an interesting research program on the war proneness of different international power distributions. Yet the patterns of international interaction implied by different structural configurations of power, as well as their outcomes in terms of conflict and peace, are not uniform throughout the international system, neither over time nor over space. Studies from the Correlates of War Project (COW) show that the frequency and seriousness of armed conflicts worldwide have differed from one period to the next – from the nineteenth to the twentieth century, or from one “historical era” to the next – and that such temporal differences cannot always be explained by changes in the structural characteristics of the international system like the distribution of national power or alliances configurations (e.g., Singer, Bremer, and Stuckey 1972; Bueno de Mesquita 1978, Gochman and Maoz 1984; Levy 1981; Moul 1988). Further, it is painfully clear that the stability of the cold war bipolar system – lauded by Waltz (1979) and, after its passing, lamented by Mearsheimer (1990), Layne (1993), and others – never did extend much beyond the northern hemisphere.

In any event, the leaders of Third World states typically have neither the inclination nor the luxury of such lofty concerns as the global balance of power. Many are too preoccupied with pressing regional and internal challenges to the security of the state to worry much about the structural attributes of the

international system. In the first edition of his *People, States, and Fear* (1983), Barry Buzan argues that patterns of alignment and enmity, often regionally specific and historically conditioned, are more salient to the security calculations of vast majority of states:

Complex patterns of alignment and enmity develop from historical conditions in all types of anarchic systems, more so in those which are highly fragmented. Despite the subjective, perceptual element of security relations, these patterns are often fairly durable features of the international system, and it is they, rather than the grosser system structure overall, which define the security environment of most states. (105)

The historical and regional dynamics of interstate cooperation and confrontation are related to the overall systemic distribution of power, with the congruence between the two being most apparent at the level of great-power relations. But as a form of state behavior, “balancing” implies a relatively fluid phenomenon compared to the typically more viscous relationships of amity and enmity.³ The distinction is a useful one generally, but it seems especially relevant for the analysis of Third World security relations.

This leads to the concept of a *security complex*, which Buzan (1991, 190, 193-194) defines as “a group of states whose primary security concerns link together sufficiently closely that their national securities cannot realistically be considered apart from one another.” Their identifying feature is “a high level of threat/fear which is felt *mutually* among two or more major states.” This definition does not include precise criteria for identifying the members of a security complex, but security complexes are usually not difficult to identify. Buzan argues that it is the intensity of state interaction within certain regions of the Third World that qualifies them as security complexes. Such interaction patterns do not

³ By “alignment” Buzan meant a correspondence in interests and outlooks between states, and was not limited to alliance or security-pact formation, which is encompassed by the concept of balancing. In the second edition of *People, States, and Fear* (1991), he refers to enmity and *amity* instead of enmity and alignment.

apply to all geographic regions composing the Third World, but Buzan (1991, 199, 210) has identified five which together do encompass most states, as shown in Figure 1: South America, the Middle East, Southern Africa, South Asia, and Southeast Asia. The Middle East security complex covers a large region from North and East Africa to the Persian Gulf, and Buzan finds it useful to distinguish four *subcomplexes*, shown in Figure 2: the Eastern Mediterranean, with Israel, Egypt, and Syria as the principal states; the Persian Gulf, with Iran, Iraq, and Saudi Arabia as the principals; the Horn of Africa, with Ethiopia, Somalia, and Sudan as the principals; and the Maghreb, a grouping with less intense interactions, with Algeria, Morocco, and Libya as the principal states.

[Figures 1 and 2 about here]

The security complexes that Buzan identifies in the Third World are regional. Some of these states define their national interests beyond the confines of their security complex, but it is generally the case that security threats are more acute the closer they are to home (other things being equal). Geography also dictates that regional security complexes frequently include secondary states arrayed in various ways around the principal rival states at the core of the complex. A secondary state is not in a relationship of *mutual* threat with a core state, but instead factors into the latter's security calculus to the extent that it aligns with other core states. The balance-of-power logic contained in realist theory is clearly relevant here, on a localized scale, and Buzan (1991, 209) sees security complexes as "subsystems – miniature anarchies – in their own right... with structures of their own."

The idea that regional proximity is a key factor in the relations between states is not new, of course. The extensive quantitative literature on war and rivalry is replete with studies showing the potential of shared borders to give rise to territorial and other types of disputes. After an exhaustive

survey of the empirical literature, John Vasquez (1993, 310) proposes that “[i]n the modern global system, the single issue that is most likely to result in interstate war (regardless of type) is one that embodies a dispute over contiguous territory.... *Ceteris paribus*, two states bordering on each other will early on in their history use aggressive displays to establish a border in an area where they both have frequent contact.” This is not a recent development. K.J. Holsti (1991) has examined the grievances behind the 177 wars and major armed interventions experienced by the modern international system, from the Peace of Westphalia in 1648 until the end of the cold war in 1989, and finds that disputes involving control over, access to, or ownership of physical space were present in more armed conflicts than were disputes over any other issue. Although issues related to state creation and ideological clashes were somewhat more prevalent during the cold war, territory still figured into one-third of the 62 major conflicts during that period. In his study of territorial conflict, Paul Huth (1996) identified 129 disputes over territory – everything from contested border demarcations to outright rejections of sovereignty – during the years 1950 to 1990. Relevant for my purposes is the fact that two-thirds of the disputes involving Third World states can be located in one of the five security complexes defined by Buzan (1991). And of the 126 militarized confrontations growing out of all Third World territorial disputes, almost 90 percent erupted within one of these complexes. Clearly, geography matters.⁴

When employing the concept of security complexes, we immediately confront the issue of boundaries. One imagines that Buzan consulted map when designating the members of Third World

⁴ See also Goertz and Diehl (1992) and Kocs (1995). Geography also matters when it comes to the diffusion of armed conflict. From their analysis of wars occurring between 1816 and 1965, Siverson and Starr (1991, 92-93) conclude that “borders and alliances create the salience and/or the ease of interaction... that significantly increases the probability that states will join ongoing wars.”

security complexes and subcomplexes, and not just those states' foreign-policy histories. Yet geographical proximity per se is not the criterion for identifying security complexes; the thickness of interstate interaction is:

A security complex exists where a set of security relationships stands out from the general background by virtue of its relatively strong, inward-looking character, and the relative weakness of its outward security interactions with its neighbors. Security interdependencies will be more strongly focused among the members of the set than they are between the members and the outside states. The boundaries between such sets will thus be defined by the relative indifference attending the security perceptions and interactions across them (Buzan 1991, 193).

For the most part, this boundary criterion is straightforward. It serves to isolate members of a security complex from nonmembers, and distinguishes one security complex from another. When applied to states without the global reach or interests of the great powers, a behavioral approach will very likely end up delineating geographical constellations of states, but that is only because neighbors interact more frequently and more intensely than do non-neighbors.

The issue of proximity and the inside/outside distinction is taken up by both David Lake and Patrick Morgan in contributions to their jointly edited volume on regional orders, a collection of essays that draws heavily on Buzan's conceptual framework. In defining a regional security complex, Lake (1997, 48-52) invokes the concept of *externality*. An externality is a cost or a benefit experienced by third parties as a result of an interaction that does not directly involve them. Costs, or negative externalities, are common in the context of regional conflict, as when refugees flood into neighboring countries when two states go to war. As Lake explains, the well-known security dilemma can also be understood as the outcome of behavior which produces an externality. This occurs when a state with no malign intentions toward its neighbors builds up its military capability to ensure its own national security.

While this build-up is not directed at any particular neighbor, it is nevertheless perceived as threatening by other states, which then respond by enhancing their own military capabilities. That response is perceived by the first state as unwarranted and itself threatening and the action-reaction process becomes a regional arms race, with the predictable result that none are more secure, and are probably quite a bit less so, than when the process started.

For Lake (1997), the “regional” in regional security complexes (RSCs) refers to the locale giving rise to security externalities, which radiate outward and may affect states outside the geographic region. But, as Morgan (1997, 30) summarizes it, the revised definition seems to be only a modest refinement of Buzan’s original notion:

A regional security complex has a geographical location, but this is not necessarily an exact guide to its members. The location is where the security relationships of consequence exist; the members are states that participate profoundly in those relationships. The participants see their security as much more closely bound up with some or all of the other members, and with their interactions in that geographical area, than with states that are not participants in those interactions.

Here the operative guide to security complex membership is “profound participation” in “security relationships of consequence.” The externalities emanating from these consequential relationships may well serve to bring affected states into the local orbit, whether they are regional neighbors or interested great powers from afar, but the nucleus of the RSC seems to be two or more geographically proximate states bound together by the thickness of their direct security-related interactions. This is not too different from the mutual fear that binds the core states of Buzan’s security complexes and the “relative indifference” that characterizes state leaders’ attitudes toward developments outside the complex. The main departure of the Lake-Morgan conception is that theirs treats major powers as members of RSCs

when they are affected by security externalities emanating from a particular region, whereas Buzan sees major powers – especially those engaged by the cold war – as comprising a distinct security complex of global scope, one that often penetrated regional complexes. This difference could be due to the fact that Buzan formulated his ideas during the cold war while Lake and Morgan were looking to the post-cold war environment.

Others have adopted analytical frameworks similar to Buzan's for purposes of Third World security analysis (e.g., Ayoob 1995; Wriggins et al. 1992; Marshall 1999; Durch 2000).⁵ Such studies often emphasize the role of extra-regional powers, thereby distinguishing (as does Buzan) between higher and lower level security complexes. Lower level, regional complexes consist of states with relatively limited power-projection capabilities and therefore have relatively little impact on security relations beyond the region. Higher level complexes involve great powers and are not geographically bounded. The dynamics of higher level complexes reverberate throughout the international system, penetrating or impacting upon regional complexes. This may take many forms, but most analysts agree that arms transfers have been “the characteristic tool of intervening great powers in almost every Third World security complex” (Buzan 1991, 213; see also Ayoob 1995, 100-102).

ANALYSIS: ARMS TRANSFERS AND SECURITY COMPLEXES

In this paper, my unit of analysis is the security complex, and my operational definition of different

⁵ It is worth noting that the concept of regional subsystems began to receive a good deal of attention in the 1960s, and a very useful review of that early literature is provided by Thompson (1973). See also Väyrynen (1984).

regional complexes in the Third World corresponds almost exactly with Buzan's (1991). That is, I examine the five regional complexes shown in Figure 1, as well as the four Middle Eastern subcomplexes shown in Figure 2. Lake's (1997) and Morgan's (1997) observations about security externalities are well taken for purposes of identifying extra-regional participants in Third World security complexes, but their definition is not substantially different from Buzan's, and is probably no better. Furthermore, Buzan gives us an actual mapping of regional complexes, while Lake and Morgan do not. The security-complex concept does deserve more attention by Third World security analysts, both the theoretically and the empirically oriented, and until such time that a scholarly consensus may emerge on a single operational definition of a regional security complex, it is appropriate to proceed with a reasonable definition in hand.⁶

My analysis focuses on the impact of arms transfers to states in several Third World regions over much of the post-World War II period. In essence, the study is bivariate; I examine only the relationship between arms transfers and regional instability. Technically speaking, my quantitative models are not really bivariate, since I do estimate the impact of arms transfers from multiple sources, using multiple indicators, and my time-series procedures employ various controls for purposes of establishing temporal

⁶ Durch's (2000) study, discussed in the previous section, also conducts some of his analyses using the security complex as the unit of aggregation. Durch identifies eleven complexes, which are similar to Buzan's eight (when the Middle East subcomplexes are considered). The main differences are that Durch (1) identifies additional complexes in Central America and the Caribbean, Northeast Asia, Western Africa, and Central Africa, and (2) combines the Eastern Mediterranean and Maghreb subcomplexes in the Middle East. Another example is Monty Marshall's (1999) multifaceted study of armed conflict in the Third World. Marshall identifies six "protracted conflict regions" (PCRs), which are much the same as Buzan's five main security complexes, except that Central America has been added.

(and, by implication, causal) order. However, conceptually, I am interested in exploring the impact of a single type of international interaction (an arms transfer) on another type of international interaction (hostile behavior). Moreover, empirically, I am interested in establishing the degree to which this impact is manifest at the regional level of aggregation.

Data and Measurement

Arms transfers. The building block of arms-transfer data in any form is a piece of military hardware shipped from one state to another. (I am concerned solely with *interstate* transfers.) The data I use come from the Stockholm International Peace Research Institute, which systematically compiles information on transfers of “major” weapons systems – aircraft (including unmanned surveillance craft), armored vehicles, artillery (100-millimeter caliber and above), guidance and radar systems, missiles, and warships – and publishes these compilations in its *SIPRI Yearbook: Armaments, Disarmament and International Security*.

The SIPRI data are released in two basic forms. For each arms importer, the registers list the military hardware provided by each supplier. Each entry in the registers includes the weapon designation (e.g., MiG-29), the number ordered, the number delivered, the year of the order, and the years of delivery, in addition to some other descriptive information. In addition to its registers, SIPRI releases data on the dollar value of arms transfers. These are annual figures, but they do not represent what the importer actually paid for its weaponry in a given year. Rather, values are attached to transferred weapons systems based on the characteristics of those systems. In effect, SIPRI estimates each weapon’s “military resource value” based on information it has compiled about sales of that weapon or

similar weapons (see Brzoska and Ohlson 1987, 352-259).

SIPRI's value data are widely used in empirical research when analysis requires annual summary indicators of arms flows between states. An alternative summary measure, the number of ongoing arms-transfer programs, is somewhat cruder but also has proven useful in quantitative research (Schrodt 1983; Kinsella 1995; Kinsella and Tillema 1995). An arms-transfer program is operationalized as a discrete entry in the SIPRI register, and the annual summary measure is the number of such entries for a particular recipient during a given year. Counting programs does not tell us how many weapons of each type were transferred between states during the year, only whether such a program was in effect. This is coarser than SIPRI's dollar-value indicator, but it has the benefit of transparency and replicability. SIPRI's pricing system for attaching values to transferred hardware, while described in some detail in its publications, still remains something of a mystery; program counts, on the other hand, are easily generated from SIPRI's published registers. In the interest of evaluating the robustness of my findings, I have used both indicators in my data analysis.

Regional conflict. I also use two alternative measures of regional conflict. One is the overall level of hostility in the region based on the number and severity of all types of conflictual interaction reported in the media. These records come from three events databases: the Conflict and Peace Databank (COPDAB: Azar 1993), the World Event/Interaction Survey (WEIS: Tomlinson 1992), and the Protocol for the Assessment of Nonviolent Direct Action (PANDA: Bond and Bond 1998). Each reports conflictual behavior undertaken by all states in the international system, ranging from mild verbal expressions of discord to full-scale war. Their temporal coverage differs but they overlap, so I am able to construct a time series for each security complex covering the 1948-1994 period. Only conflictual

events involving states within each security complex (or subcomplex) are relevant for my purposes, and in aggregating these data annually I use the Goldstein (1992) scale. The scale gives higher scores to more hostile acts and is widely used in events data analysis (see Schrodtt and Gerner 2000).⁷

The other measure of regional conflict is the number of militarized interstate disputes (MIDs) in the region, as compiled by the Correlates of War Project (Jones, Bremer, and Singer 1996). A MID involves the threat, display, or use of military force by one state against another. The COW Project reports several pieces of information about such incidents – for example, the type of military action employed, the fatality level, and the nature of the settlement (if any) – but I simply count the number of incidents occurring during the year between states within each security complex without regard to their severity or hostility level. Compared to the more inclusive event-based measure of regional conflict, the MID count represents only the most dangerous of conflictual interactions. As with the alternative arms-transfer measures, I use both conflict indicators in my analysis.

Estimation

I estimate the impact of arms transfers on regional conflict using Poisson regression. Like the least squares regression model, the Poisson regression model is a member of the family of generalized linear models (GLMs). Where the least squares model assumes a normal probability distribution for the

⁷ PANDA uses the WEIS coding scheme, so time series constructed from these databases are easily spliced. COPDAB, however, uses different event codes and weights. Before concatenating the series, I rescale the COPDAB using parameter estimates from a linear regression of WEIS on COPDAB for the overlapping years of 1966-1978. This procedure is scrutinized by Reuveny and Kang (1996), and is found to be a sound one.

random dependent variable, the Poisson model assumes a Poisson distribution, which is better suited to the sorts of event counts I have compiled for this study. Although a GLM, including the Poisson model, links the systematic component (the independent variables) linearly to a *function* of the random component (the expected value of the dependent variable), the link function itself need not be linear. Thus, while least squares regression uses the identity function to relate the systematic and random components of the model, Poisson regression often uses the natural log function, in which case it is a log-linear model. This means that the expected value of the dependent variable, Y , is an exponential (inverse log) function of the independent variables, x , and a vector of impact parameters, β , to be estimated using the data: $E(Y) = e^{x\beta}$. The expected value of the dependent variable in a log-linear model can never be a negative number, and neither can an event count (whether weighted and unweighted), making this an appropriate functional form for my purposes.

There are some other issues to consider if these models are to provide reasonable estimates of the impact of arms transfers on regional conflict. First, in order to be confident that observed correlations reflect the effect of arms imports on hostile behavior, and not the reverse, I stipulate that cause comes before effect. Therefore, arms-transfer values are expressed as a lagged three-year moving average, and arms-transfer programs are tallied as the number of programs continuing from previous years. Admittedly, temporal order is not a foolproof means of approximating causal order – anticipated future behavior is likely to drive some arms acquisition – but I am aware of no better way of addressing this tricky issue.

A second consideration is the one I alluded to above: the exclusive focus on effect of arms transfers on regional stability leaves many important factors outside the model. Although my intention is

not to provide a complete accounting of the forces driving conflict within security complexes, this certainly presents a problem to the extent that the omission of such variables biases my estimates of the impact of arms flows. However, one way to address this potential pitfall is suggested by the observation that social behavior, including the behavior of states, is very often autocorrelated; the best model of the present is the most recent past. Therefore, in addition to the arms-transfer variable, I include in each model a control variable representing past regional conflict: when analyzing conflictual events, last year's events; when analyzing militarized disputes, the number of disputes continuing from last year. Controlling for past conflict, then, is a substitute for controlling for the myriad of important factors not explicitly represented in an otherwise extremely sparse model.

Findings

At the beginning of the paper I suggested that the suspicion among the majority of scholars who have studied regional stability and instability in the Third World is that while arms supplies are not the root of all evil, they very often inflame regional tension and contribute to an escalation of hostility and military confrontation. This suspicion is generally born out by the results shown in Table 1, which shows impact parameter estimates for the arms-transfer variables along with an indication of statistical significance.

With one exception, all five security complexes, and all four subcomplexes within the Middle East, have experienced an increase in conflictual interaction in the aftermath of increases in arms flows, whether measured in dollar values (column 1) or program counts (column 2). Likewise, when arms supplies drop, so too does regional instability. The findings are not quite as uniform when it comes to the impact of arms supplies on specifically militarized conflict, but the association between arms and MIDs is

evident in Southern Africa and within three of the four subcomplexes in the Middle East. The magnitude of the impact of arms flows varies greatly across regions. Larger effects appear in some of the Middle East subcomplexes (like the Horn of Africa) and Southern Africa, while smaller ones are evident in South America and South Asia.⁸

[Table 1 about here]

What about the exceptions? First, in South Asia and Southeast Asia there is no significant correlation between arms transfers and militarized disputes, even though there is some evidence that transfers contribute to higher levels of regional tension generally. More curious, however, is the finding that arms transfers may have actually contributed to a dampening of regional conflict. This appears to be the case for militarized disputes in the Eastern Mediterranean, which is dominated by the Arab-Israeli conflict, even though the overall hostility level in the region (as measured by the events data) was positively associated with arms importation. One implication is that arms suppliers, while their policies fanned the flames regional tension, were often able to restrain their clients from explicitly threatening or using military force (e.g., Miller 1995; Golan 1991; Kinsella 1998).

A preface is in order before turning to Table 2. Although the findings from my previous research have never been free of ambiguities, I have repeatedly turned up evidence American and Russian arms transfers sometimes had different effects on state behavior (Kinsella 1994, 1995; Kinsella and Tillema 1995). In particular, where differences are found, Russian transfers tended to be more destabilizing that

⁸ Precise interpretation of the numbers is difficult since the models are nonlinear, and also because the event data series are not simple counts but weighted counts, and therefore a predicted increment of change in this variable is not terribly intuitive. In the next iteration of this paper, I will simulate the effects of changes in arms flows for select regions and display these graphically.

American transfers, which sometimes actually had a restraining effect. This is a provocative finding to say the least, but it is not easily dismissed as a statistical artifact when it keeps cropping up in different analytical contexts. I will return to this issue, as the finding has emerged again in this investigation, though again accompanied by some contradictory evidence.

[Table 2 about here]

Table 2 shows the results of an analysis similar to that reported in Table 1, except that the Poisson regression models include two separate arms variables – American transfers and Russian transfers – instead of a single variable representing total transfers. As before, there is considerable evidence that the arms-supply policies of both the United States and Russia had a destabilizing effect of regional security complexes. Also as before, this is more consistently the case for overall regional hostility than for militarized disputes, though the results are strong for MIDs as well. Comparing the effects of arms transfers from two major suppliers is instructive. First, notice that one or both measures of Russian arms transfers are associated with increased regional tension in every security complex (columns 1 and 2) and with increased MIDs in all but South Asia and the Eastern Mediterranean (columns 3 and 4). Two anomalies, the statistically significant negative estimates, are highlighted with boxes.

Now consider the effects of American arms (columns 5 to 8). Evidence pointing to their exacerbating effect is least ambiguous for the Horn and Maghreb subcomplexes in the Middle East. In South America and Southern Africa, on the other hand, arms transfers from the United States contributed to decreased regional hostility (the boxed estimates) or had no impact at all. For the Eastern Mediterranean, three of the four Poisson models reveal the same dampening effect, while for the Persian

Gulf and South Asia, one model does. However, for each of the latter three regions other estimates are positive and statistically significant, which is puzzling. Had these other estimates suggested no effect whatever, the result might have been attributed to noise in the data, but the blatant inconsistency shown here is wanting of a more substantive explanation, one I am presently unable to provide. In short, compared to the effects of Russian arms transfers, which are rather consistently associated with increased regional hostility, the effects of American transfers are often shown to be associated with restraint and stability. This is not a uniform tendency, or one unmarred by contradictory evidence, but it is a finding that deserves further consideration in the concluding section of this paper.

CONCLUSION

A two-world perspective characterizes much of the theorizing about international security in the Third World, as Buzan (1998, 224) has pointed out. In contrast to the zone of peace encompassing the industrialized democracies, international relations among Third World states inhabiting the zone of conflict are said to be guided by “the traditional rules of power politics that prevailed all over the world up to 1945. States expect and prepare for the possibility of serious tension with their neighbors. Some restraint is provided by deterrence (in a few places nuclear deterrence) but economic interdependence between neighbors is generally low, and populations can often be easily mobilized for war.”

If *realpolitik* continues to govern interstate relations in the Third World, might realist theory provide an explanation for some of this investigation’s seemingly incongruous results? A structural realist explanation applied to regional security complexes would focus not only on the regional distribution of power, but also on the degree of penetration by outside powers in the form of arms supplies. Buzan

(1991, 208) has suggested that unipolar penetration brings about a suppression of local conflicts, a situation most closely approximated by the relationship between the United States and the countries of South America. Bipolar penetration, on the other hand, as applied to most of the other security complexes during the cold war and especially to the Middle East subcomplexes, is more likely to be associated with an amplification of local conflicts. Here the competition between supplier states may afford recipients a measure of leverage in dealing with their patrons; higher stakes turn up the flow of weaponry, creating a context in which misperception and recklessness are more likely to defeat caution and restraint.

A structural realist interpretation of my statistical results is not terribly enlightening. All but a few of the estimates reported in Table 1 provide evidence of the destabilizing effects of arms transfers, and the exceptions emerge not in regions dominated by one or the other superpower, but in South Asia and the Eastern Mediterranean where both were actively engaged. There are many more exceptions in Table 2, including in South America and Southern Africa where bipolar arms-supply patterns were generally absent, but more conspicuous is that almost all the negative estimates suggesting the stabilizing effects of arms transfers apply to American transfers, not Russian transfers. Some of the inconsistencies revealed in Table 2 caution against making too much of the differences between American and Russian transfers until more empirical detective work can be done. In the meantime, however, we ought to consider possible explanations for such a supplier effect.

Arms from one source are not necessarily politically equivalent to arms from another. The Soviet Union was openly committed to help promote revolutionary change during the cold war era; the United States affiliated mostly with the existing world order and with conservative local powers. One of

the essential premises of traditional – as opposed to structural – realist theory in international relations is that the actions of status quo powers such as the United States ought to have been more conducive to international stability than those of revolutionary or revisionist powers like the Soviet Union (e.g., Morgenthau 1978, 42-47). Patterns of alignment often matched local states involved in enduring rivalries with the like-minded superpower willing to supply arms to assist in the regional struggle, especially in the Middle East (e.g., Walt 1987; Schweller 1994; Kinsella 1994; Kinsella and Tillema 1995). This may take us part of the way toward understanding some of the incongruous supplier effects exhibited at the regional level of aggregation.

Does this that arms transfers from the United States or any other supplier interested in stabilizing the status quo – which today does not exclude Russia – might be a force for regional cooperation in the Third World? While some of my results could lead to that conclusion, I am not inclined to go that far, even if the remaining empirical ambiguities are cleared away in future research. The cold war period dominates my analysis, and this was a special time. Deterring challenges by supplying weaponry presumes a willingness of major powers to stay engaged in regional security complexes in the interest of crisis management. Yet the end of the cold war seems to have mitigated many of the incentives to do so. Beyond that, stability through deterrence is at best a reprieve. We should not discount the value of regional stability, considering the tragic histories of some Third World security complexes, but we should also aim for the more enduring conditions of conflict resolution and regional cooperation.

REFERENCES

- Ayoob, Mohammed. 1995. *The Third World Security Predicament: State Making, Regional Conflict, and the International System*. Boulder, CO: Lynne Rienner.
- Azar, Edward E. 1993. "Conflict and Peace Data Bank (COPDAB), 1948-1978," third release. College Park: University of Maryland, Center for International Development and Conflict Management.
- Baugh, William H. and Michael J. Squires. 1983. "Arms Transfers and the Onset of War Part II: Wars in Third World States, 1950-1965." *International Interactions* 10: 129-141.
- Bond, Joe and Doug Bond. 1998. "The Protocol for the Assessment of Nonviolent Direct Action (PANDA): Codebook for the P24 Data Set." <<http://data.fas.harvard.edu/cfia/pnscs/DOCS/contents.htm>>.
- Brzoska, Michael and Thomas Ohlson. 1987. *Arms Transfers to the Third World 1971-85*. New York: Oxford University Press.
- Brzoska, Michael and Frederic S. Pearson. 1994. *Arms and Warfare: Escalation, De-escalation, and Negotiation*. Columbia: University of South Carolina Press.
- Bueno de Mesquita, Bruce. 1978. "Systemic Polarization and the Occurrence and Duration of War." *Journal of Conflict Resolution* 22: 241-267.
- Buzan, Barry. 1983. *People, States, and Fear: The National Security Problem in International Relations*. Chapel Hill: University of North Carolina Press.
- Buzan, Barry. 1991. *People, States, and Fear: An Agenda for International Security Studies in the Post-Cold War Era* (second edition). Boulder, CO: Lynne Rienner.

- Buzan, Barry. 1998. "Conclusions: System versus Units in Theorizing about the Third World." In *International Relations Theory and the Third World*, ed. Stephanie G. Neuman. New York: St. Martin's.
- Craft, Cassidy. 1999. *Weapons for Peace, Weapons for War: The Effects of Arms Transfers on War Outbreak, Involvement, and Outcomes*. New York: Routledge.
- Durch, William J. 2000. *Constructing Regional Security: The Role of Arms Transfers, Arms Control, and Reassurance*. New York: Palgrave.
- Gerner, Debbie J. 1983. "Arms Transfers to the Third World: Research on Patterns, Causes and Effects." *International Interactions* 10: 5-37.
- Gochman, Charles S. and Zeev Maoz. 1984. "Militarized Interstate Disputes, 1816-1976: Procedures, Patterns, and Insights." *Journal of Conflict Resolution* 28: 585-616.
- Goertz, Gary and Paul Diehl. 1992. *Territorial Changes and International Conflict*. London: Routledge.
- Golan, Galia, 1991. "Superpower Cooperation in the Middle East." In *The Cold War as Cooperation: Superpower Cooperation in Regional Conflict Management*, eds. Roger E. Kanet and Edward A. Kolodziej. Baltimore: Johns Hopkins University Press.
- Goldstein, Joshua S. 1992. "A Conflict-Cooperation Scale for WEIS Events Data." *Journal of Conflict Resolution* 36: 369-85.
- Holsti, Kalevi J. 1991. *Peace and War: Armed Conflicts and International Order, 1648-1989*. Cambridge: Cambridge University Press.
- Huth, Paul K. 1996. *Standing Your Ground: Territorial Disputes and International Conflict*. Ann

Arbor: University of Michigan Press.

Jones, Bremer, and Singer

Kinsella, David. 1994. "Conflict in Context: Arms Transfers and Third World Rivalry During the Cold War." *American Journal of Political Science* 38: 557-581.

Kinsella, David. 1995. "Nested Rivalries: Superpower Competition, Arms Transfers, and Regional Conflict, 1950-1990." *International Interactions* 21: 109-125.

Kinsella, David. 1998. "Arms Transfers and Foreign Policy Conflict." *Journal of Peace Research* 35: 7-23.

Kinsella, David and Herbert K. Tillemma. 1995. "Arms and Aggression in the Middle East: Overt Military Interventions, 1948-1989." *Journal of Conflict Resolution* 39: 306-329.

Klare, Michael T. 1990. "Wars in the 1990s: Growing Firepower in the Third World." *Bulletin of the Atomic Scientists* 46: 9-13.

Kocs, Stephen. 1995. "Territorial Disputes and Interstate War, 1945-1987." *Journal of Politics* 57: 159-175.

Lake, David A. 1997. "Regional Security Complexes: A Systems Approach." In *Regional Orders: Building Security in a New World*, ed. David A. Lake and Patrick M. Morgan. University Park: Pennsylvania State University Press.

Layne, Christopher. 1993. "The Unipolar Illusion: Why New Powers Will Rise." *International Security* 17: 5-51.

Levy, Jack S. 1981. "Alliance Formation and War Behavior: An Analysis of the Great Powers, 1495-1975." *Journal of Conflict Resolution* 25: 581-613.

- Maoz, Zeev. 1989. "Joining the Club of Nations: Political Development and International Conflict, 1816-1976." *International Studies Quarterly* 33: 199-231.
- Marshall, Monty G. 1999. *Third World War: System, Process, and Conflict Dynamics*. Lanham, MD: Rowman and Littlefield.
- Mearsheimer, John J. 1990. "Back to the Future: Instability in Europe After the Cold War." *International Security* 15: 5-56.
- Menon, Rajan. 1986. "Soviet Arms Transfers to the Third World: Characteristics and Consequences." *Journal of International Affairs* 40: 59-76.
- Miller, Benjamin. 1995. *When Opponents Cooperate: Great Power Conflict and Collaboration in World Politics*. Ann Arbor: University of Michigan Press.
- Morgan, Patrick M. 1997. "Regional Security Complexes and Regional Orders." In *Regional Orders: Building Security in a New World*, ed. David A. Lake and Patrick M. Morgan. University Park: Pennsylvania State University Press.
- Moul, William B. 1988. "Balance of Power and the Escalation of Serious Disputes Among European Great Powers, 1815-1939." *American Journal of Political Science* 32: 241-275.
- Pearson, Frederic S., Robert A. Baumann, and Gordon N. Bardos. 1989. "Arms Transfers: Effects on African Interstate Wars and Interventions." *Conflict Quarterly* 9: 36-62.
- Pearson, Frederic S., Michael Brzoska, and Christer Crantz. 1992. "The Effects of Arms Transfers on Wars and Peace Negotiations." In *SIPRI Yearbook: World Armaments and Disarmament*. Oxford: Oxford University Press.
- Reuveny, Rafael and Heejoon Kang, 1996. "International Conflict and Cooperation: Splicing COPDAB

- and WEIS Series.” *International Studies Quarterly* 40: 281-305.
- Ross, Andrew L. 1990. “Do-it-yourself Weaponry.” *Bulletin of the Atomic Scientists* 46: 20-22.
- Sanjian, Gregory S. 1995. “A Fuzzy Systems Model of Arms Transfer Outcomes.” *Conflict Management and Peace Science* 14: 1-24.
- Sanjian, Gregory S. 1999. “Promoting Stability or Instability? Arms Transfers and Regional Rivalries, 1950-1991.” *International Studies Quarterly* 43: 641-670.
- Sanjian, Gregory S. 1998. “Cold War Imperatives and Quarrelsome Clients: Modeling U.S. and USSR Arms Transfers to India and Pakistan.” *Journal of Conflict Resolution* 42: 97-127.
- Schrodt, Philip A. 1983. “Arms Transfers and International Behavior in the Arabian Sea Area.” *International Interactions* 10: 101-127.
- Schrodt, Philip A. and Deborah J. Gerner. 2000. “Analyzing International Event Data: A Handbook of Computer Based Techniques.” Department of Political Science, University of Kansas.
<<http://www.ukans.edu/~keds/papers.html>>.
- Schweller, Randall L. 1994. “Bandwagoning for Profit: Bringing the Revisionist State Back In.” *International Security* 19: 72-107.
- Sherwin, Ronald. 1983. “Controlling Instability and Conflict Through Arms Transfers: Testing a Policy Assumption.” *International Interactions* 10: 65-99.
- Singer, J. David, Stuart Bremer, and John Stuckey. 1972. “Capability Distribution, Uncertainty, and Major Power War, 1820-1965.” In *Peace, War, and Numbers*, ed. Bruce M. Russett. Beverly Hills: Sage.
- Siverson, Randolph M. and Harvey Starr. 1991. *The Diffusion of War: A Study of Opportunity and*

Willingness. Ann Arbor: University of Michigan Press.

Spear, Joanna. 1995. *Carter and Arms Sales: Implementing the Carter Administration's Arms Transfer Restraint Policy*. London: Macmillan.

Thompson, William R. 1973. "The Regional Subsystem: A Conceptual Explication and a Propositional Inventory." *International Studies Quarterly* 17: 89-117.

Tomlinson, Rodney G. 1993. "World Event/Interaction Survey (WEIS): Coding Manual," sixth revision. Annapolis, MD: United States Naval Academy, Department of Political Science.

U.S. Mutual Defense Assistance Act. 1949. *United States Statutes at Large* 63: I, 714-721.

Vasquez, John A. 1993. *The War Puzzle*. Cambridge: Cambridge University Press.

Väyrynen, Raimo. 1984. "Regional Conflict Formations: An Intractable Problem of International Relations." *Journal of Peace Research* 16: 349-369.

Walt, Stephen M. 1987. *The Origins of Alliances*. Ithaca, NY: Cornell University Press.

Waltz, Kenneth N. 1979. *Theory of International Politics*. Reading, MA: Addison-Wesley.

Wriggins, H. Howard, ed., with F. Gregory Grause, Terrance P. Lyons, and Evelyn Colbert. 1992.

Dynamics of Regional Politics: Four Systems on the Indian Ocean Rim. New York: Columbia University Press.

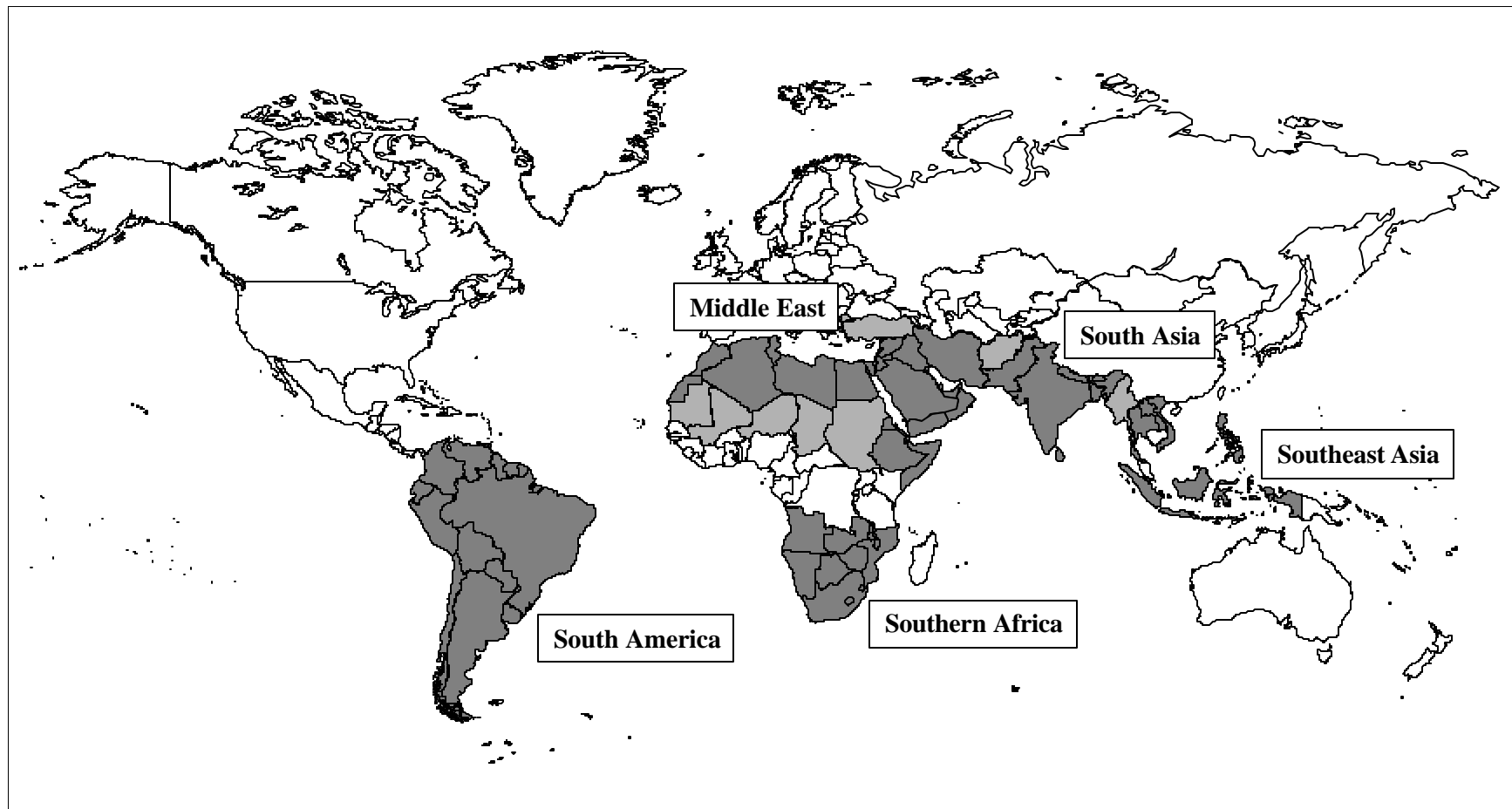


Figure 1: Security Complexes in the Third World

Source: Buzan (1991, 210). “Buffer states” are shown in a lighter shade of grey.

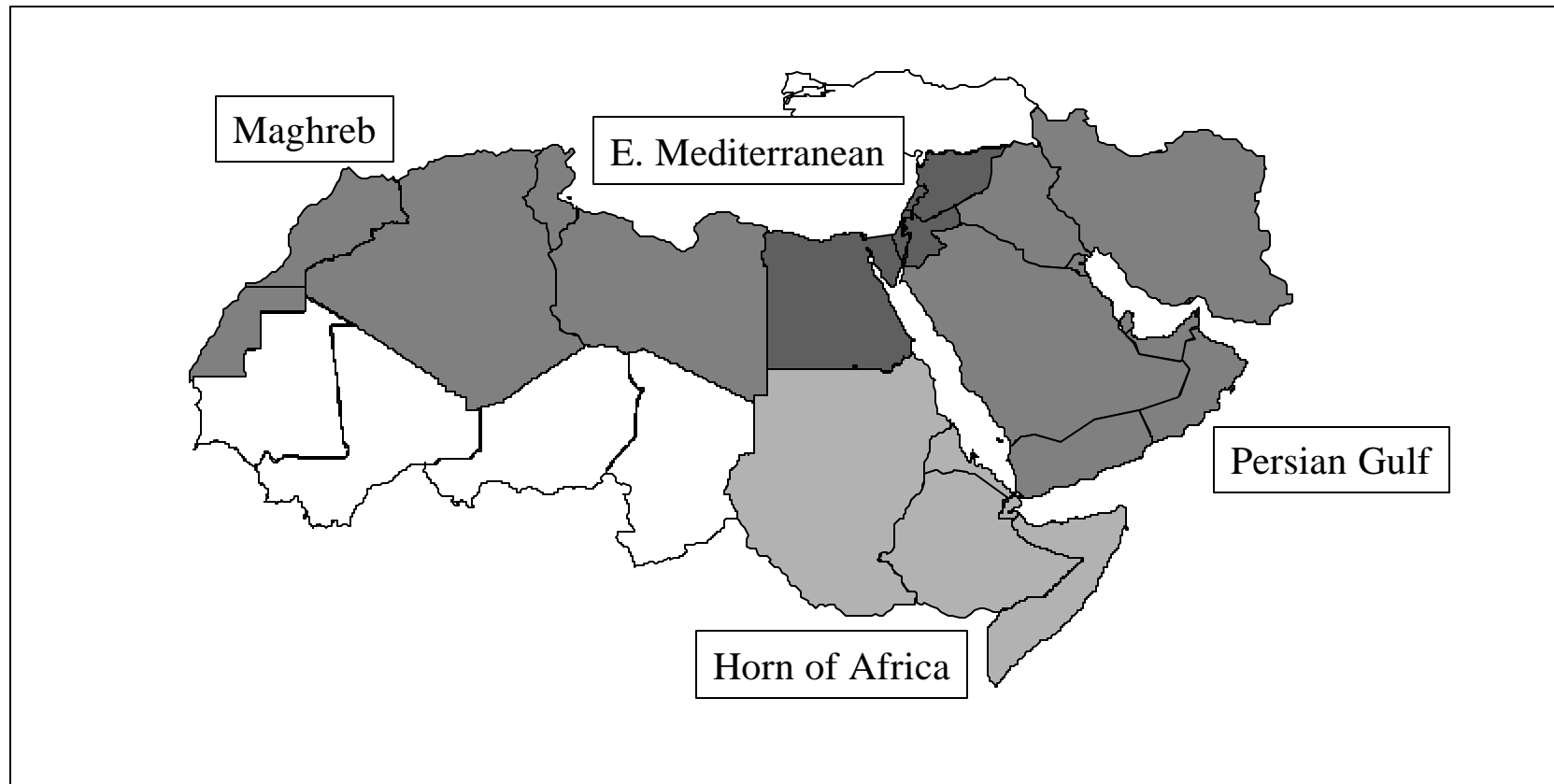


Figure 2: Sub-complexes in the Middle East

Source: Buzan (1991, 199).

Table 1 Poisson Regression Estimates of the Impact of Arms Transfers on Regional Conflict, 1948-1994

<i>Security Complex</i>	Impact of Total Arms Transfers on			
	Conflictual Events		Militarized Disputes	
	<i>values</i>	<i>programs</i>	<i>values</i>	<i>programs</i>
South America	0.089 **	0.002 **	0.174	0.004 *
Southern Africa	0.146 *	0.052 **	0.827 **	0.038 **
South Asia	-0.071 **	0.005 **	0.014	0.002
Southeast Asia	0.213 **	0.015 **	-0.015	-0.001
Middle East				
Maghreb	0.386 **	0.021 **	0.583 **	0.041 **
Horn of Africa	0.978 **	0.042 **	1.595 **	0.054 **
E. Mediterranean	0.051 **	0.005 **	-0.135 **	-0.005 **
Persian Gulf	0.514 **	0.016 **	0.271 **	0.014 **

Note: The numbers are parameter estimates for the arms-transfer variable (computed as past values or continuing program) from a regression on regional conflict (all conflictual events or militarized disputes), controlling for past regional conflict. Arms-transfer values are lagged three-year moving averages; arms-transfer programs are those continuing from previous years.

* significant at the 0.10 level

** significant at the 0.05 level

Table 2 Poisson Regression Estimates of the Impact of Russian and American Arms Transfers on Regional Conflict, 1948-1994

<i>Security Complex</i>	Impact of Russian Arms Transfers on				Impact of American Arms Transfers on			
	Conflictual Events		Militarized Disputes		Conflictual Events		Militarized Disputes	
	<i>values</i>	<i>programs</i>	<i>values</i>	<i>programs</i>	<i>values</i>	<i>programs</i>	<i>values</i>	<i>programs</i>
South America	1.354**	-0.078**	-0.321	0.109**	-0.864**	-0.020**	0.837	0.014
Southern Africa	0.544**	0.049**	0.645*	0.029	-44.628**	-0.141**	-16.106	-0.223*
South Asia	-0.018**	0.024**	-0.021	-0.005	2.582**	-0.021**	0.604	0.023*
Southeast Asia	0.376**	0.076**	0.178	0.070**	0.156**	0.056**	-0.440	-0.012
Middle East								
Maghreb	0.147**	0.000	0.626**	0.027	15.941**	0.130**	5.767**	0.171
Horn of Africa	0.366**	0.127**	1.399	0.094**	9.883**	0.413**	8.914**	0.267**
E. Mediterranean	0.147**	0.017**	-0.044	0.002	-0.067**	0.004**	-0.306**	-0.012**
Persian Gulf	1.520**	0.067**	0.836**	0.041**	0.331**	0.011**	-0.174**	0.012**

Note: The numbers are parameter estimates for the Russian and American arms-transfer variables (computed as past values or continuing program) from Poisson regressions on regional conflict (all conflictual events or militarized disputes), controlling for past regional conflict. Arms-transfer values are lagged three-year moving averages; arms-transfer programs are those continuing from previous years. Boxes highlight negative and statistically significant estimates.

* significant at the 0.10 level

** significant at the 0.05 level