
12 The arms trade

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12.1 INTRODUCTION

The Book-of-the-Month Club's April selection in 1934 was *Merchants of Death*. In that best-selling volume, H.C. Engelbrecht and F.C. Hanighen argued that the activities of arms merchants undermine the policies of national governments to whom they owe allegiance. Part of their message was, in essence, that American neutrality was compromised during World War I by weapons manufacturers whose strict adherence to commercial principles in peddling their wares left them little incentive to ponder the political or moral implications of their profession. The arms business is exactly that – a business – and business is good when nations are at war, or when they fear it.

Merchants of Death figured prominently among the polemics that fueled the flames of American isolationism, culminating in the Neutrality Acts of 1935–39. Prior to the passage of the Neutrality Acts and the formation of the Munitions Control Board, the export of weaponry by American merchants was essentially unregulated. By the outbreak of a second World War in Europe, the US Government had established controls over private arms sales, and thus what was for the arms merchants a means of profit became for the government an instrument of foreign policy. This new role for arms transfers was inaugurated with the signing of the Lend-Lease Act of 1941, in the hopes that direct American involvement in the European war could be avoided, and that the country would remain merely the great *arsenal* of democracy. With the passing of international arms marketing from the private to the public sphere, so withered public vigilance.

George Bernard Shaw appears to have foreseen this transition in the final act of *Major Barbara*, which opened in London in 1906. It includes this exchange between Andrew Undershaft, the arms manufacturer, and Adolphus Cusins, a professor of Greek and Undershaft's prospective son-in-law and inheritor:

CUSINS: What on earth is the true faith of the Armorer?

UNDERSHAFT: To give arms to all men who offer an honest price for them, without respect of persons or principles: to aristocrat and republican, to Nihilist and Tsar, to Capitalist and Socialist, to Protestant and Catholic, to

burglar and policeman, to black man, to white man and yellow man, to all sorts and conditions, all nationalities, all faiths, all follies, all causes and all crimes. . . CUSINS: [A]s to your Armorer's faith, if I take my neck out of the noose of my own morality I am not going to put it into the noose of yours. I shall sell cannons to whom I please and refuse them to whom I please. So there!

During the cold war that followed World War II, the major powers, and especially the superpowers, provided and refused weapons to whom they pleased, and often with little regard for whether clients could offer an honest price for them. The arms business ceased to be solely a business; it also became an instrument of foreign policy and geopolitical competition.

The social scientific literature on the arms trade began to take shape during the height of the cold war and is now quite extensive. The purpose of this chapter is to survey some of the main themes in this literature and to suggest at least a couple directions for future social scientific research. Scholars, policymakers and activists who examine the arms trade do so for any number of reasons: to identify important actors in the arms trade, whether states or nonstate actors; to illuminate the decision-making processes driving arms imports and exports; to examine political-military relationships between suppliers and recipients; to identify global and regional trends in arms flows and the diffusion of arms export capacity; to ascertain the impact of arms transfers on interstate conflict, civil war or government repression; to evaluate the prospects for arms control and disarmament in both pre- and post-conflict environments. Thus, the aims of those contributing to the arms trade literature are descriptive, explanatory and normative. Of course, I cannot in this brief survey hope to do justice to the scope and nuance of such a vast body of research and writing, one spanning multiple social scientific disciplines as well as the policy, activist and legal fields. But I will identify several of the most important topics tackled by arms trade researchers and try to give some sense of what we know (and don't know) about the issues that have animated this active research community.

The next three sections will address descriptive, explanatory and normative questions, respectively. Generally speaking, the descriptive literature endeavors to identify the main players in the arms trade, their arms-transfer policies and relationships, and patterns or trends in global and regional arms flows. The explanatory literature consists of research designed to uncover the causes and consequences of the arms trade, especially the relationships between arms transfers and violence between or within states. The normative literature not only aims to expose the economic, political, and humanitarian ills associated with the arms transfers, but also the prospects for developing international rules and institutions for the purpose of curbing the arms trade and thereby mitigating these ills.

Before turning to the question of arms control, this last section will focus specifically on the illicit arms trade and what might be learned from the application of social network analysis.

12.2 ACTORS, FLOWS AND STRUCTURES

We might start by distinguishing the trade in finished weapons systems and ammunition from the trade in components and spare parts, the provision of military training and other services, and the general diffusion of military and dual-use technology (nuclear and non-nuclear). It is probably fair to say that most arms trade research, including major data collection efforts, focus on finished conventional weapons systems, although both theoretical treatments and empirical analyses often address these other dimensions of proliferation secondarily or by implication. In any event, I limit my attention in this literature survey to the trade in finished systems.

A second useful distinction is that between major conventional weapons and small arms and light weapons (SALW). According to a UN panel of experts, “small arms are those weapons designed for personal use, and light weapons are those designed for use by several persons serving as a crew.” Small arms include pistols, rifles, carbines and light machine guns; light weapons include heavy machine guns, grenade launchers, portable anti-aircraft and anti-tank systems, and mortars of less than 100 mm caliber. This category of weaponry also includes ammunition and explosives: cartridges, shells and missiles, anti-personnel and anti-tank grenades, landmines and other explosives (UN 1997, pp. 11–12). Most SALW research adopts this or a very similar working definition. Of course, everything else short of nuclear, chemical and biological weapons would count as major conventional weapons systems.

Until the end of the Cold War, the social science literature (which dates back to the late 1960s) was concerned mainly with the trade in major weapons systems, for several reasons. First, the volume of that trade had been rising substantially since the end of World War II, peaking in the early 1980s at 60 to 70 billion dollars per year (at today’s price levels), and thus represented what many considered to be an alarming trend in the proliferation of destructive military capability. Second, the major weapons trade was dominated by the two superpowers and their closest allies and was thus a central manifestation of cold war dynamics for both academic researchers and policy analysts.¹ Third, for many the supply of major conventional weaponry seemed to feed interstate rivalry in the developing world and arguably contributed to the outbreak of wars in the Middle East, South Asia, the Horn of Africa and elsewhere. Fourth, as a

practical matter, those collecting hard data on the arms trade could (and still can) be much more confident of the accuracy of information pertaining to major weapons transfers than to the SALW trade, which is diffuse, less closely monitored by governments and easier to conceal by those not wanting the attention and scrutiny. Researchers who made use of arms trade data for either descriptive or explanatory purposes had to adjust the scope of their inquiries accordingly.

The end of the cold war ushered in a new focus on the SALW trade. The US–Soviet competition was no longer the core organizing force behind global security relations and, whether there was a causal connection or not, violent interstate conflict was becoming increasingly rare. Instead, internal war was accounting for a far larger proportion of armed violence and it was SALW, not major conventional weapons, that were doing most of the killing. Humanitarian crises precipitated by the most relentless of these internal conflicts gave added urgency to this reorientation of arms trade research. Thus, since the early 1990s, the literature on the SALW trade has burgeoned and is now quite substantial. This has been accompanied by new and continuing data collection efforts, which will help to place SALW research on an increasingly firm social scientific footing.

12.2.1 Hierarchies in Arms Supply

The state of social science theory pertaining to the arms trade is relatively underdeveloped compared to some other areas of inquiry within the disciplines of political science, economics and sociology. Nevertheless, the literature has seen the development of some noteworthy conceptual frameworks that might be best described as “pre-theoretical.” In a path-breaking study of the arms trade, researchers at the Stockholm International Peace Research Institute (SIPRI) identified three patterns of arms supply. The *hegemonic* pattern, which they said was epitomized by the United States and Soviet Union during the Cold War, involves the use of arms transfers “to support a particular group in power, or to prevent the emergence of an alternative group which might be willing to accept the dominance of another country” (SIPRI 1971, p. 17). This is not the case for *industrial* patterns of supply, where exporting states are concerned primarily with maintaining the economic viability of their own defense industries, or for *restrictive* patterns of supply, where producing states seek to minimize their involvement in local conflicts by refusing to equip actual or potential belligerents. The three patterns are, to be sure, ideal types: political, economic and even humanitarian considerations factor into any given supplier’s decision to arm any given client at any given time.

Other studies offer fairly comprehensive historical–structural frameworks situating the arms trade within world politics and the evolution of the international system over time. In a comparative analysis of the inter-war and post-World War II arms trade, Harkavy (1975) examined supplier and recipient market structures and showed how they corresponded to the shifting distribution of power during these two periods. During the inter-war years, supplier markets were only moderately oligopolistic, a larger proportion of importing states maintained multiple-supplier relationships, and arms acquisitions that cut across alliances were frequent. These patterns reflected not only a more diffused distribution of capabilities among the major suppliers, but also a lesser degree of state involvement in the market as compared to subsequent years. After World War II, the supplier market became more tightly oligopolistic and increasingly dominated by the United States and Soviet Union. Cross-bloc arms transfers were virtually nil, and even importing states in the periphery generally did not mix acquisitions from the opposing cold war alliances – unless a change in government leadership brought about a major ideological reorientation. As Harkavy (1975, p. 11) remarked, the Cold War arms trade was reflective of a “concatenation of factors involving bipolarity, stable hegemonic alliances under the leadership of the two major powers, an ideological locus of conflict, and a zeitgeist of total war.”²

A more sweeping historical–structural framework was provided by Krause (1992), who sketches three waves in global arms transfer and production system. The first wave began with the so-called Military Revolution of the fifteenth century and lasted until the seventeenth century. This was followed by a two-century long period of relative stasis in military-technological development. Arms were indeed produced and traded, but the pace of technological change was slow in comparison to the preceding period, and especially subsequent periods. The second wave began in the middle of the nineteenth century and was associated with the rapid advance of the Industrial Revolution. There was no period of technological stasis between the second wave and the current third wave; rather, the end of one and the beginning of the next were condensed by the transformative event of World War II.

Within each of these three historical waves, Krause identifies a similar evolutionary dynamic consisting of five phases. In phase one, significant military-technological innovation is realized by a select group of states that then become the leading centers of global arms production. In phase two, rising demand for advanced weaponry produced by this first tier drives a rapid expansion of the arms trade and, in phase three, rising demand for arms production technology accompanies the demand for finished systems. This gives rise to a second tier of arms producing states able

to manufacture a wide range of military equipment, including the most advanced systems, but generally limited in their capacity to innovate at the military-technological frontier. Next, in the fourth phase, the international arms market becomes characterized by fiercer competition among a larger number of suppliers. The transfer of arms accelerates, as does the diffusion of arms production capacity, and there now emerges a third tier of weapons manufacturing states. Capacity varies in the third tier, but a common characteristic is the need to import designs, machinery, and often the key components necessary for domestic production of the most technologically advanced systems, if such systems can be produced at all. In the fifth and final phase, military-technological diffusion slows and the three-tier arms-production hierarchy solidifies (Krause 1992, pp. 26–32).

This evolving three-tier structure among arms producers is complemented by a lower echelon of states with no significant arms-manufacturing capacity. If these states elect to maintain any military capability at all, they must import it. All states that achieved independence as a result of decolonization after World War II were in this position, as were many other states, like those in Latin America, that received independence earlier. Indeed, most developing states are still in this position; a rather limited number even now have the military-industrial capacity associated with third-tier arms production. Although this evolutionary pattern, as described by Krause (1992), has been repeated in three waves during the history of the contemporary state system, it is also the case that the second iteration was more compressed than the first, and the third – which some would argue is now yielding to a fourth – has been shorter still. Analysts debate the nature, timing and implications of military-technological innovations for the global arms trade (for example, Carus 1994; Buzan and Herring 1998; Zarzecki 2002), but Krause's general depiction of the *longue durée* is enlightening and has not been the subject of sustained criticism.

A more recent study by Bourne (2007) examines the structural features of the SALW trade and is thus indicative of the shifting focus of arms trade researchers. Bourne confronts what he calls the “amorphous image” of SALW diffusion in which virtually no structural constraints impede the global flow of SALW, especially to regions of conflict. This image was embraced by the academic and policy communities because SALW diffusion did not seem to conform to the patterns observed for the conventional arms trade generally or for the more closely scrutinized trade in nuclear, biological and chemical (NBC) weapons.³ If these structures did not apply to the SALW trade, then was it not reasonable to conclude that there was no discernible structure at all? Although the amorphous image – in which SALW spread in accordance with market forces of supply and demand, unconstrained by the normative or policy concerns of states and

intergovernmental organizations – is consistent with many of the arguments found in the literature on globalization, Bourne's examination suggests that it is exaggerated. There is no denying that constraints on SALW proliferation are fragmented and porous and do allow for a wide range of state and nonstate participants in the legal and illicit SALW trade. But structures do exist, at both the global and regional levels.

Bourne's (2007) complex and nuanced analysis defies easy summary, but some specific elements of it are worth noting here. First, compared the arms trade in general, the global SALW trade is not dominated by the major supplier countries to nearly the same extent. This is not surprising given the less demanding military-technological capabilities required to produce SALW, and has been observed for other periods by Harkavy (1975), Krause (1992) and others who have described the tiered structure of arms production and supply in the international system (for example, Anthony 1993). Second, in contrast to the amorphous image of the SALW trade, Bourne argues that the illicit market is not globalized, but is primarily a regional phenomenon (the infamy of such globe-trotting arms brokers as Victor Bout and Monzer al-Kassar notwithstanding). Third, although the amorphous image seems to imply a rather homogenized process whereby SALW flow into ongoing conflict areas, Bourne suggests that the character of proliferation very much depends on specific factors like the type of states, insurgencies and war economies that compose the conflict complex.

12.2.2 Data Collections

These and the relatively few other broad conceptual frameworks found in the arms trade literature tend to be inductive, relying on historical and contemporary data to help identify major and minor actors in the arms trade, patterns of arms flows and discernible global and regional structures. This section briefly introduces the most important sources of contemporary arms trade data, both qualitative and quantitative.

There are three main sources of quantitative information on conventional arms transfers. The US Department of State's Bureau of Verification, Compliance, and Implementation publishes *World Military Expenditures and Arms Transfers (WMEAT)*. Previously compiled by the Arms Control and Disarmament Agency, an independent agency within the US Government until it was subsumed within the State Department in 1999, *WMEAT* was released annually and reported arms imports and exports for all states in dollar-valued aggregates as well as counts of weapons transfers by category (aircraft, tanks, submarines and so forth). In recent years, however, *WMEAT* releases have been sporadic and less

comprehensive in their coverage and consequently this data source is less often used in academic research than it once was.⁴ The Congressional Research Service (CRS), a research arms of the US Congress, also publishes arms trade data in its annual report, *Conventional Arms Transfers to Developing Nations* (for example, Grimmett 2009). These data are limited to transfers by major suppliers to developing countries only, but are noteworthy for distinguishing between arms agreements and arms deliveries.

The most authoritative source of both quantitative and qualitative information on the arms trade is the yearbook published by SIPRI, *Armaments, Disarmament and International Security*.⁵ SIPRI relies exclusively on open sources for its data and focuses its attention on the kind of information consistently available to the public, namely major weapons systems. These include aircraft, armor and artillery, guidance and radar systems, missiles and ships. In addition to those items physically transferred to recipients, SIPRI includes weaponry manufactured by the recipient under license. The data come in two forms: “trade registers” of transferred military hardware broken down by model (F-16 aircraft, M-60 tanks, Patriot surface-to-air missile systems and so forth), and dollar-valued aggregates. The latter are what SIPRI calls its “trend indicator values” (TIVs). These figures do not represent what the recipient paid for arms, as this sort of information is exceedingly difficult to gather on a consistent basis, or even an assessment of the market value of the weapons. Rather, SIPRI applies a pricing procedure intended to index the military resource value of transferred weaponry based on a set of core weapons about which price and performance information is fairly reliable. Thus, TIVs are suitable for the analysis of trends, but not for establishing the financial value of arms transfers or their value in relation to other types of expenditure. They are, however, well-suited to various forms of econometric analysis and continue to be used extensively in academic research.

As the attention of the academic and policy communities has turned increasingly to SALW, there has been a great deal of interest in the collection and distribution of systematic information (qualitative and quantitative) on this aspect of the arms trade. Because the SALW trade is much less regulated by state authorities than the major weapons trade, and because the weapons themselves are smaller and harder to observe by journalists and others who might want to document their movement, reliable information is very difficult to gather on a consistent basis. But researchers are now beginning to accumulate and release pertinent data.⁶ Several significant data collection efforts could be mentioned, covering various dimensions of the SALW trade and its potential consequences, but two stand out as sustained and fairly comprehensive. The Small Arms Survey, located at the Graduate Institute of International Studies in Geneva, is a

clearing house for public information on SALW production and transfers. The Survey's staff conducts in-depth country studies and other analyses focusing on various dimensions of the legal and illicit SALW, many of which are reported in its annual review along with limited amounts of quantitative data (for example, Small Arms Survey 2009). The Norwegian Initiative on Small Arms Transfers (NISAT), located at the International Peace Research Institute in Oslo, also issues reports on a variety of SALW issues. In addition to its document library, NISAT maintains an online database of SALW transfers, with some records dating back to 1962. These data are likely to feature in future academic and policy research.⁷

12.3 CAUSES AND CONSEQUENCES

The broad conceptual frameworks discussed in the previous section are among the very few that have appeared in the arms trade literature. A far larger share of the work produced by scholars, policy analysts and activists consists of investigations into the arms export or import policies of particular states, historical and contemporary studies of the flow of weapons to regions plagued by violent conflict, primers on the workings of the arms trade and its role in international politics, and exposés of arms manufacturers or traders engaged in questionable dealings. This literature is voluminous and is not reviewed here.⁸ Rather, I limit the survey in this section mainly (but not exclusively) to work that attempts to model, formally or statistically, factors driving the arms trade and especially the impact of arms transfers on violent conflict.

12.3.1 Strategic Interaction in the Arms Market

Compared to some other subject areas related to the political economy of war – conflict processes and arms racing, for example – formal modeling has not been used extensively in the arms trade literature. The primary exception is the work by Levine and collaborators, which models the decisions of arms producers, exporters and importers as games of strategic interaction with consequences for the security and welfare of participating states (for example, Levine, Sen and Smith 1994; Levine and Smith 1997; García-Alonso and Levine 2002, 2007). Early models tended to treat suppliers and recipients as unitary actors pursuing both economic and security objectives, but current models include additional layers of strategic interaction: between exporting states, between exporter governments and their domestic arms manufacturers, between the arms manufacturers themselves, and between importing states and their adversaries.

These models of strategic interaction have also evolved to include a range of competing incentives on the part of suppliers and recipients. For example, suppliers have incentives to subsidize their own arms manufacturers in order to increase international market share, yet arms exports generate negative externalities for suppliers and other countries (although exports to allies can offset these for suppliers). Negative externalities provide incentives for coordinated restraint among suppliers, but collective action is difficult in this realm for the same reasons that it is hard to achieve when confronting international terrorism, environmental degradation or other global problems (Sandler 2000). Recipients, of course, want to import weapons for reasons of national security, but they also have incentives to build their own arms production capacity, especially if supplier have imposed export controls (Brauer 2000; Levine and Smith 2000; Mouzakis 2002). Formal models show how regional arms races and other unintended consequences may follow. In addition to export controls, this literature has also sought to model the impact of changing security perceptions, military-industrial policies, market concentration and other variables.

At this time, these models are mainly the purview of those working within the discipline of economics. It remains to be seen whether their methods and insights gain traction among scholars in other social science disciplines who share a substantive interest in the arms trade and its impact on the security and well-being of governments and their populations, but who are less likely to command the skills required for formal modeling.

12.3.2 The Arms Trade and Interstate Conflict

When considering the arms trade, it is no surprise that scholars writing about security in the developing world tend to highlight its harmful consequences. Ross (1990, p. 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.” Ayoob (1995, p. 102) has put it similarly: “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.” Thus, despite the presupposed harmful effects of arms transfers, there is a recognition that factors driving state leaders to resort to military conflict as a means of redressing grievances – or factors prompting them to stumble into military conflict unintentionally – are complex and multifaceted. Any monocausal

argument, whether it highlights arms supplies or some other contributor, 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.

Some of the most careful empirical work on the subject has been conducted by Pearson and associates. 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, pp. 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 developing 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. 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.⁹

Craft (1999) examines the relationship between arms transfers and military conflict at the global level of analysis. Based on data covering the 1950–92 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 – 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, p. 75) acknowledges the element of truth in common rejoinder to arms controllers that “weapons don't make wars, men do.”

The quantitative results reported by Durch (2000) exhibit similar patterns and lead to similar conclusions. He reports a strong positive correlation between the total dollar value of arms transfers to the developing world and the number of states involved in external conflict, but then shows that this relationship weakens or disappears when the focus shifts from the developing world as an aggregate to the behavior of arms recipients. In delving further, Durch analyzes the number of systems delivered in various heavy-weapon categories (instead of dollar values) and introduces controls for past conflict and regional locale. His conclusion: “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” (Durch 2000, p. 104).

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. Sanjian (1999), for instance, has constructed formal models of Cold War arm transfers to rival states (using fuzzy sets) that correspond rather well to the historical data. He 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. The “stability model” does the reverse. Sanjian is interested in the impact of transfers on the entire range of interstate

behavior, diplomatic as well as military, and his empirical results for three different interstate rivalries – India–Pakistan, Iran–Iraq, and Ethiopia–Somalia – consistently support the instability rather than the stability model (see also Sanjian 1998).

The quantitative literature covering the Cold War period generally has not distinguished the impact of US arms transfers from Soviet transfers. Sanjian (1999) 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, suggests that the superpowers' arms-supply relationships affected regional security in distinct ways. For example, in relations between the Arab states and Israel or between Iraq and Iran, Soviet arms transfers were associated with subsequent increases in hostility levels between rival states. Sometimes hostility was initiated by the recipient of Soviet weaponry, and sometimes by its opponent. That is, although opponents were themselves the recipients of US arms, my time-series analyses suggest that their conflict initiation tended to be a preemptive response to Soviet transfers to the other side, not a response to their own arms acquisitions (Kinsella 1994, 1995; Kinsella and Tillema 1995).

12.3.3 Arms Transfers, Internal Conflict and Repression

Compared to the literature examining the relationship between arms transfers and interstate conflict, there is considerably less research that attempts to model the linkages between the arms trade and internal conflict. Practical matters explain this in large part. Formal and statistical approaches to the study of internal war are themselves of fairly recent vintage, certainly relative to the study of interstate war. Also, as discussed above, there are as yet few sources of SALW data that are sufficiently developed to be useful for systematic spatial or longitudinal analysis, and this is the type of weaponry that seems most important to consider in the context of internal conflict and rebellion.¹⁰ There are some studies worth mentioning here, however, and there is reason to expect that more will be forthcoming as SALW data are further developed and distributed to the research community.

Sislin and Pearson (2001) consider several hypotheses on the impact of arms transfers on the onset of ethnic uprisings; the intensity, duration and escalation of ethnopolitical violence; and the involvement of third parties in the resolution of internal wars. In addition to examining a number of cases of internal conflict in some detail, they also test some of their propositions by constructing various categorical measures of ethnopolitical violence and arms acquisition and cross-tabulating them. They show that

higher levels of weapons accumulation by ethnic groups in conflict zones are a good predictor of subsequent ethnopolitical violence. Although Sislin and Pearson do not differentiate between internal and external arms supply in their analysis of conflict onset, they do consider the source of both rebels' and governments' weaponry when they turn to the question of conflict duration and intensity. Arms importation by ethnic groups is not correlated with conflict duration; importation by governments, on the other hand, is associated with longer internal wars. Causation could run in both directions, as the authors point out, but it is probable that arms transfers to governments facing rebellions prolongs these violent internal struggles. The intensity of violence, measured in terms of casualties, correlates with arms importation as well, but here it is the rebels' imports (not the government's) that seem to make a difference. Finally, Sislin and Pearson find that arms imports by rebel groups are associated with costly but indecisive internal conflicts commonly called "hurting stalemates" in the conflict resolution literature (for example, Zartman 2000).

The linkage between arms transfers and state repression, accompanied or not by rebellion and warfare, has also been the subject of social scientific investigation. In an analysis of developing countries over the 1982–92 period, Blanton (1999) finds that increased arms imports correlate with a higher incidence of human rights violations, even after controlling for governmental involvement in internal and external conflict. In other studies, Blanton (2000, 2005) flips the causal arrow and asks whether US arms supplies have been responsive to the human rights records of importing states, as well as their degree of democratic governance. Her argument, supported by the evidence, is that US arms transfers during the Cold War were driven more by realpolitik considerations than by humanitarian or governance concerns. However, since the end of the Cold War, both the level of democracy and the protection of human rights have become significant considerations in US arms export policy. Where these considerations come into play is at the gatekeeping ("selection") stage – who qualifies to be admitted to the club of arms recipients – not in determining how much a recipient gets. Interestingly, at this second ("amount") stage, Blanton shows that realpolitik considerations still dominate.

A survey of social scientific research into some of the most important causes and consequences of the arms trade suggests that despite an awareness of the potentially harmful repercussions of arms transfers, and the corresponding temptation of supplier states to exercise some restraint, weaponry has flowed rather freely to even the most volatile regions of the world. The results – not always and everywhere, but often and in very many places – have been predictable: an increase in repression, violence and warfare. The empirical evidence is not unambiguous, nor does theory

or research imply that the arms trade provides any more than a partial explanation for these societal ills. Furthermore, systematic research examining the link between SALW and internal conflict is underdeveloped, not least due to data limitations. But the arms trade has been the preoccupation of many social science researchers and activists, perhaps because it is the product of policy choices that might be subject to influence.

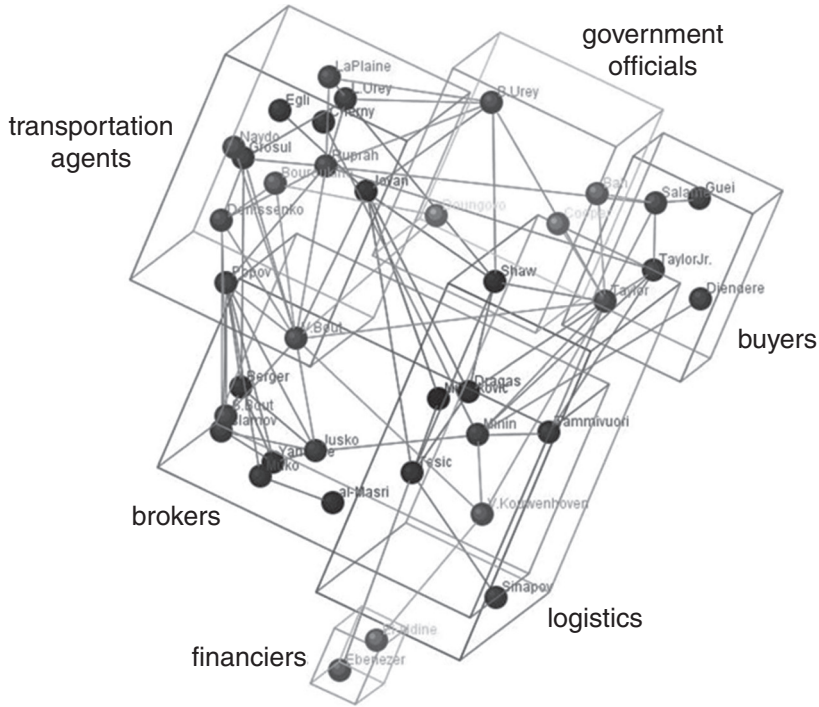
12.4 SOME FUTURE DIRECTION FOR ARMS TRADE RESEARCH

This last section considers two areas that are likely to see a fair amount of continued research, especially given the emphasis that the SALW trade has received since the end of the cold war. One, the illicit arms trade, which (for obvious reasons) is not amenable to systematic observation and measurement, requires sustained descriptive research in the years ahead. The other, international norms limiting the SALW trade, engages the aspirations of a substantial subset the research and activist communities. Future work in this area will help to develop both the explanatory literature, to the extent that it can account for success and failure in norm-building processes, and the normative literature, to the extent that theory and research are deployed to advance the small arms control agenda.

12.4.1 Illicit Arms Transfers and Social Network Analysis

The value of the SALW trade amounts to roughly US\$4 billion per year, and probably 10 to 20 percent of this occurs in the black and gray markets. Generally speaking, legal arms transfers are sanctioned by states and are often (but not always) elements in an ongoing military relationship between governments. Illicit transfers, on the other hand, may be state-sanctioned, but usually they are not.¹¹ Although the illicit arms trade is driven on the supply side mainly by the profit motive, it nevertheless requires a degree of shared commitment (possibly even trust) on the part of buyers, sellers, brokers and other intermediaries to an underground system of economic exchange. I have argued that this feature of black and gray arms markets lends them to conceptualization as social networks, and to empirical examination using the tools of social network analysis (Kinsella 2006).

Curwen's (2007) examination of illicit arms transfers to Liberia provides a good illustration of the application of social network analysis (SNA) in an effort to identify key actors and their placement in these underground networks. Based on UN reports documenting arms embargo violations,



Source: Based on data in Curwen (2007)

Figure 12.1 *Actors in illicit arms transfers to Liberia*

Curwen identifies the individuals and transactions involved in four arms-transfer events occurring between 1999 and 2002. All together, 38 individuals comprise the nodes of this network – brokers, transportation agents, buyers (including Liberian President Charles Taylor himself and his son, Chuckie) and so on. The 78 ties between the nodes are operationalized as the presence of contractual, business, or employer–employee relationships between individuals. This illicit arms transfer network is depicted in Figure 12.1.¹² From the mapping of actors (clustered according to role) and ties – called a “sociogram” or “network graph” – we get a good sense of network structure and the most connected individuals.

Social network data are arranged as a square “sociomatrix” in which there is both a row and a column for each node in the network. A cell in the matrix contains a 1 if the actor represented by row i , designated n_i , had a relationship with the actor represented by column j , designated n_j , in which case $x_{ij} = 1$; otherwise $x_{ij} = 0$. Curwen’s (2007) data are nondirectional in

that a tie between two nodes represents a relationship rather than a sent or received communication or other exchange; thus, $x_{ij} = x_{ji}$. But in other SNA applications to the study of illicit arms transfers, it may be useful to consider directional ties. In this case, an actor's *outdegree*, $d(n_i)$, is the number of other actors to whom that actor has directed some form of communication or exchange (for example, delivered weapons); *indegree*, $d(n_j)$, is the number of actors from whom a communication or exchange has been received. That is,

$$d(n_i) = \sum_{\forall j \neq i} x_{ij} \text{ and } d(n_j) = \sum_{\forall i \neq j} x_{ji}, \quad (12.1)$$

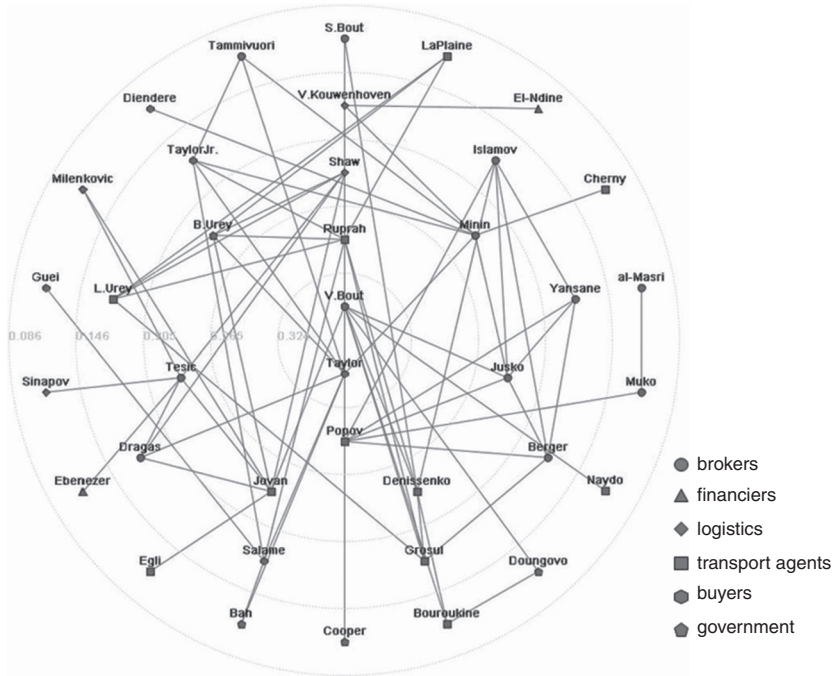
which are, respectively, the row i and column j totals of the sociomatrix. If there are s actors in the network, the maximum number of directed ties between them is $s(s - 1)$.

In most social networks, certain actors are more prominent than others and the evidence of their prominence is often the number and type of social ties they maintain with other actors. The *centrality* of a network actor is sometimes indexed as its outdegree or indegree (or both), but since these measures are greatly affected by the number of actors in a network, it is useful to normalize the index. Thus, the normalized outdegree and indegree centrality indexes can be computed as

$$C'_D(n_i) = \frac{\sum_{\forall j \neq i} x_{ij}}{s - 1} \text{ and } C'_D(n_j) = \frac{\sum_{\forall i \neq j} x_{ji}}{s - 1}. \quad (12.2)$$

Again, because Curwen's (2007) data are nondirectional – the sociomatrix is symmetric – the formulas in (12.2) give the same result. Figure 12.2 arranges the nodes so that the actors with the highest centrality measures are positioned nearer the center of five concentric rings, while those with lower scores are positioned nearer the periphery. Not surprisingly, the most central actors in the network examined by Curwen are Charles Taylor (a buyer) and Victor Bout (a broker).

Another SNA concept useful for the study of illicit arms trade networks is “brokerage.” Brokers are actors positioned between nonadjacent actors and through which a directional interaction takes place. Social network analysts have gone on to specify particular brokerage roles based on the actors' membership in groups or other attribute categories. For instance, a node occupies a “coordinator” role when it is interposed between nodes within its same group or organization; when the three nodes are members of different groups, the broker acts as a “liaison.” Other brokerage roles are defined when the broker and one actor are members of one group



Source: Based on data in Curwen (2007)

Figure 12.2 Actor centrality in Liberia's illicit arms trade

and the other actor is a member of a second group: brokers that mediate inflows into their group are “gatekeepers”; those that mediate outflows from their own group are “representatives.” Identifying important brokers in a social network involves counting the number of triads in which that node is positioned as an intermediary. I do not pursue brokerage concepts any further here, except to suggest their face validity when Curwen’s (2007) data are analyzed. Of the ten actors with the highest brokerage scores, all but two are coded (a priori) by Curwen as either arms brokers or transportation agents.¹³ These are precisely the sort of intermediaries we want the analysis to identify.

SNA need not be limited to networks composed of individuals. Curwen (2007) also analyzes ties between individual and organizations (a two-mode network) and international relations researchers have applied SNA methods to relations between states (for example, Hoff and Ward 2004; Maoz et al. 2006; Hafner-Burton, Kahler and Montgomery 2009). Some of my own research on the illicit arms trade, while built upon a dataset

than simply identifying individuals and locales in the illicit arms trade, it will become possible to model the linkages among them as a function of factors on both the supply and demand side. The role of ongoing conflict, social and economic deprivation, weapons surpluses, criminal networks and other conditions conducive to proliferation have been highlighted by small arms researchers and activists. The cause of arms control will be advanced to the extent that we can identify the most important forces driving proliferation, especially those that are most subject to policy intervention and manipulation, and the individuals and locales that figure prominently as hubs in the arms supply network.

12.4.2 International Norms and Arms Control

This chapter has not surveyed the arms control literature as it pertains to the weapons trade, but I do want to conclude with some observations on future social science research in this area. It is safe to say that a substantial majority of those in the academic community who conduct research on the SALW trade share a normative commitment – among themselves and with those in the activist community and many others in policymaking circles – that SALW proliferation needs to be curbed and that some sort of international action is necessary. That does not mean that international action is likely. Researchers have begun to examine the hurdles along the path to successful arms control, especially in the light of an evolving body of theory from international sociology and political science.

Grillot, Stapley and Hanna (2006) compare the small arms movement with the International Campaign to Ban Landmines (ICBL), which now serves as a benchmark for measuring the success of transnational advocacy networks. Drawing on work of Keck and Sikkink (1998) and other contributors to the literature on global civil society, Grillot et al. (2006, pp. 68–72) argue that despite certain similarities, there are key differences in the arms control issues and the movements themselves that account for the achievements of the ICBL in comparison (thus far) to those of small arms movement. For example, although small arms, like landmines, are linked to the death and maiming of innocents, there is no “short and clear causal chain” given that “gun violence may be the result of a multitude of factors, such as instability, corruption, and poverty, as well as gun availability and build-up.” As a transnational network, the ICBL is also less diverse more centralized than the small arms movement, which is composed of many more groups and organization and lacks a core leadership – notwithstanding direction provided by the International Action Network on Small Arms (IANSA).

Further research on the small arms movement and the prospects for

the controlling the SALW trade will continue to engage constructivist approaches to the study of world politics, which focus on the domestic, international and transnational processes by which states' interests are defined and evolve (for example, Finnemore and Sikkink 1998; Adler 2002). The failure of multilateral arms control negotiations to yield an international treaty limiting the SALW trade would seem to provide confirmation for a rationalist argument that such an outcome is to be expected given the distribution of interests and influence among states engaged in the negotiations. But as Krause (2002) points out, understanding the norm-building process on this issue requires that we consider more than these multilateral interactions. We must also examine the domestic and transnational political processes that have prompted many states to formulate positions and policies on SALW proliferation and have encouraged them to undertake various initiatives, including at the regional level (see also Garcia 2006, 2009).

Progress in our understanding of norm-building and the role of transnational advocacy networks will advance the theoretical development of the arms trade literature. It will also provide new and interesting questions for empirical research – and, we can hope, opportunities for social science to help advance the cause of arms control and conflict resolution.

NOTES

1. This connection between the superpower rivalry and the global arms trade is implicit, if not explicit, in much of the research covering all or part of the Cold War period. Studies that investigate this connection explicitly include Neuman (1986), Mintz (1986), Sanjian (1988, 1998), Kinsella (1994, 1995, 2002).
2. Harkavy (1994) applied his basic comparative framework to the immediate post-Cold War period, concluding that there were certain resemblances to the interwar arms trade, especially to the extent that contemporary arms transfers are less politicized than before. Transfers in the post-Cold War years lost much of the geopolitical and ideological content they had acquired during the long US-Soviet rivalry.
3. Bourne also refers to the amorphous image of SALW spread as the “diffusion image” – in contrast to the “proliferation image” that applies to the more restrictive, state-centric spread of NBC weapons and ballistic missiles, or the “trade image” that applies to the similarly state-centric, if somewhat less restrictive, spread of major conventional weapons (see Bourne 2007, Chapter 2).
4. The 2005 edition is the most recent, the first since 2000, but as of this writing its phased online release does not yet include any arms transfer data. See US Department of State (2009).
5. Originally called *World Armaments and Disarmament*, the SIPRI Yearbook has been published since 1969. Data on arms transfers to the developing world during the cold war have been collected in two separate volumes (see SIPRI 1975; Brzoska and Ohlson 1987). These and other data can also be retrieved from the “SIPRI Arms Transfers Database” online at www.sipri.org/databases/armstransfers.
6. States are invited to provide information on their conventional arms transfers for the

- UN Register of Conventional Arms, and although the UN register originally recorded only major weapon transfers, nearly 60 states have now provide information on their SALW transfers as well. This reporting is completely voluntary, however, and it is clear from the database that only a fraction of SALW exports and imports have been recorded. See Holtom (2009), UN Department of Disarmament Affairs (2002).
7. Much of the data compiled and distributed by both the Small Arms Survey and NISAT are drawn from customs information in the UN's Commodity Trade Statistics Database (Comtrade). The NISAT "Small Arms Trade Database" can be accessed at www.prio.no/NISAT/Small-Arms-Trade-Database/.
 8. The best of this work is often to be found in the annual reviews published by SIPRI and the Small Arms Survey.
 9. 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 emphasis on human rights. That literature is reviewed in Gerner (1983) and is well represented in the special issue of *International Interactions* in which Gerner's review appears (e.g., Baugh and Squires 1983; Schrodt 1983; Sherwin 1983).
 10. As Krause (2002, p. 251) observes, "small arms and light weapons are implicated in complex causal pathways with these various problems, although little work has yet been done to trace systematically these pathways to assess the relative weight of small arms (compared to other factors) or to evaluate the effectiveness of particular policy measures."
 11. An arms transfer may be authorized by the government, but still violate the state's laws or international arms embargoes. Although illegal, some researchers regard these as covert transfers rather than illicit transfers. Illicit transfers would be those undertaken by private actors without legal authorization, even though the transactions may involve the participation of corrupt government officials. The term "gray market" is often used to refer to arms transfers that are not clearly illegal (that is, when pertinent laws are ambiguous) or wholly illegal (that is, when authorized transfers are later diverted in unauthorized directions). There is no absolute consensus in the arms trade literature on these use of these terms (see, for example, Bourne 2007, pp. 39–42; Naylor 2004, pp. 88–132; Marsh 2002).
 12. I have generated Figures 12.1 and 12.2 from the raw data contained in Curwen (2007, Appendix B). Clearly, there were more than 38 individuals involved in these four events, so the network that Curwen reconstructs is represents only the most visible (to UN experts) of the real-world network. The study of illicit networks must therefore contend with questions of sampling (for example, Rothenberg 1995; Frank 2005).
 13. These results are available upon request.
 14. The *Illicit Arms Transfers Database* (IATD) is an evolving dataset consisting of information gleaned from news and other reports of illegal arms shipments crossing interstate borders. At this stage of development, the IATD project has relied primarily on NISAT's "Black Market File Archive," a collection of news stories and investigative reports on the illicit arms trade. The unit of observation in IATD is an illicit arms transfer "event," defined as coterminous with a particular arms shipment's journey from source to recipient, possibly intercepted along the way. Each record in the dataset consists of data describing that event, including the actors and locations involved in the shipment's journey from originator to recipient (or interceptor). Most variables are event descriptors and can be grouped as they pertain to (1) the *source* of the arms shipment, (2) those involved in the arms *deal*, (3) the *characteristics* of the arms shipped, (4) the *journey* that the shipment took after leaving the source, and (5) the shipment's *destination*. See Kinsella (2008) for a complete description.
 15. Here, "exporter" means the state locale serving as the starting point for a shipment of illicit weaponry arriving in an African country, not necessarily the country that manufactured the weaponry. Also, I am using the terms "prominent" and "central" to

describe state locales that served a starting points for shipments of arms to the largest number of the other countries, not necessarily starting points for the largest volume of transferred weaponry. However, I suspect that there is a correlation.

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