Article

Cooperation and Conflict
2014, Vol. 49(4) 438–463

DOI: 10.1177/0010836714525052
cac.sagepub.com
SAGE

Producing European armaments: Policymaking preferences and processes

Marc R DeVore
School of International Relations, University of St. Andrews, UK

Abstract
Nothing is more important to Europe's future as a security actor than supplying its armed forces with modern weaponry. Because individual states lack the research and development budgets and scale economies to remain autarkic, the survival of Europe's defence-industrial base depends on international cooperation. As in other areas of international affairs, the ability of states to cooperate 'under anarchy' is inextricably tied to the existence of international institutions. However, the nature of arms production renders the design of institutions particularly challenging. Problems lie in both the multiplicity of potential cooperative outcomes and the variety of policy tools available. Ultimately, the choice of policies and policy tools can generate friction between the key groups of actors involved in defence-industrial policymaking. This study systematically explores how variations in the structure of international armaments institutions have shaped both the influence of different groups of actors and the nature of collaborative weapons projects. To preview my conclusions, three broad trends can be observed in the evolution of armaments institutions. These are as follows: (1) the gradual incorporation of a larger number of actors into the arms cooperation process; (2) the incremental exclusion of military professionals from armaments institutions; and (3) the growing influence of corporate actors.

Keywords
Armaments, European integration, institutional design, international cooperation, international institutions, NATO, preferences, transatlantic

Introduction[1]

Few issues are more important to Europe's future as a security actor than its ability to supply its armed forces with sophisticated weaponry. While a common arms procurement policy could transform the European Union's (EU's) 27 member states into a

Corresponding author:
Marc R DeVore, School of International Relations, University of St. Andrews, St. Andrews, KY16 9AL, UK.
Email: mrd7@st-andrews.ac.uk

defence-industrial superpower whose ability to produce cutting-edge weaponry would be second only to the United States', present-day redundancies amongst European states' national defence efforts raises the spectre of atomized European defence industries being driven out of business by overseas rivals.[2] Because of the issue's importance, scholars and policymakers alike have increasingly turned their attention to the issue of how European armaments cooperation can and should be organized.

According to some observers, the European Commission exploited the end of the Cold War to reframe the production of armaments as an EU issue, catalysing a process whereby supranational and intergovernmental actors are contributing to an ever-increasing institutionalization of this domain (Mörth, 2003). For others, EU states' efforts to enhance their 'shared' defence through intergovernmental interactions is driving armaments cooperation (Britz, 2010; Britz and Eriksson, 2005; Jones, 2007: 136–180). Yet other analysts argue that the future of European armaments cooperation lies in small numbers of states forming either robust non-EU organizations or EU 'pioneer groups' willing to pursue a degree of defence-industrial integration that is greater than the majority of EU member states will accept (Mawdsley, 2003; Witney, 2008). Although differing on the relative weights they assign to intergovernmental and supranational policymaking processes, all of these analyses treat states as unitary actors whose interactions with one another and/or with the supranational European Commission have determined the fate of cooperative armaments projects.

However, a long tradition of research into national defence-industrial policies suggests that procurement outcomes are driven by strategic interactions amongst an 'iron triangle' of political, governmental and corporate actors (Adams, 1982; Peck and Scherer, 1962; Sapolsky et al., 2009: 61–94). Logically, therefore, a key challenge facing the architects of European armaments organizations is determining which domestic groups should be represented in international negotiations and how they should be engaged. Within this context, there is a natural tendency to restrict negotiations to as few actors as possible, because fewer participants generally mean a better chance for rapid agreement. However, as Andrew Moravcsik and Ulrich Krotz have demonstrated, discontented domestic actors sabotage multinational armaments projects when they conclude that the terms of collaboration are unfavourable to them (Krotz, 2011; Moravcsik, 1993). Consequently, armaments organizations' architects must also seek to incorporate or otherwise co-opt domestic actors that possess a de facto ability to veto their states' participation in armaments projects.

Although previous scholarship suggests that decisions about how to incorporate domestic actors into European armaments organizations' decision-making processes should shape the volume and nature of the collaboration that occurs, no analysis has systematically explored the relationship between the structure of European armaments organizations and the activities of domestic defence-industrial actors. To fill this lacuna, this article examines both how structural changes in armaments organizations have, over time, empowered different domestic groups to pursue their preferences and how the exclusion or inclusion of groups shapes the fate of cooperative armaments projects. To this end, the next two sections explore the preferences of domestic defence-industrial actors and how international institutions shape these groups' abilities to pursue their preferences. Then, the following three sections (1) trace how the evolving institutional

structures of European armaments organizations have given voice to different domestic defence-industrial actors from 1949 to present, and (2) analyse how these groups' efforts to pursue their policy preferences shaped the outcome of European armaments projects.

To preview my conclusion, the way in which armaments organizations empower different groups to pursue their interests exercises a decisive influence on both the nature and outcome of cooperative armaments projects. Early attempts at organizing European armaments cooperation sought to maximize efficiency by empowering military officers and technocrats to represent their states at the international level. However, political and corporate actors who were excluded from these arrangements felt that their preferences were inadequately incorporated into projects' designs and, therefore, undermined many early collaborative initiatives. Consequently, from the mid-1960s the architects of armaments organizations sought to involve a broader range of domestic actors in international decision-making processes. While these organizations' inclusiveness has facilitated the completion of a larger number of cooperative projects, the roles accorded political and corporate actors and the increased complexity of international decision-making processes have negatively impacted the cost-effectiveness of the collaborative weapons that have been produced.

Since the 1990s, European states have sought to address this problem by entrusting cooperation to organizations with increasingly large and independent bureaucracies, such as the European Defence Agency (EDA), the Organisation Conjointe de Coopération en Martières d'Armement (OCCAR) and the European Commission. Nevertheless, the anticipated efficiency gains have yet to emerge because these organizations have thus far failed to provide effective oversight for armaments projects or to hold industries accountable for their contractual commitments. While some believe that greater resources will enable armaments organizations to rectify this situation, the complex arrangements dictated by the need to incorporate a large number of domestic actors into policymaking processes and the increasing ability of corporations to impose their preferences on armaments organizations may constitute an insurmountable obstacle to cooperative projects ever proving economically efficient.

Actors and preferences

Whereas prior examinations of institutionalized European armaments cooperation treated states as unitary actors interacting with one another and with the European Commission, this article explores the relationship between the structure of European armaments organizations and the actions of influential domestic defence-industrial actors. Although scholars such as Ulrika Mörth, Malena Britz and Arita Eriksson argue that armaments integration differs from other fields of European integration because of the number of powerful domestic actors who must be accommodated, no comprehensive analysis exists detailing how European armaments organizations included or excluded political, military and corporate actors in their decision-making processes (Britz and Eriksson, 2005: 54–55; Mörth and Britz, 2004: 958). To understand why such a differentiated approach to domestic actors is analytically valuable, it is first necessary to examine how the arms industry differs fundamentally from other sectors of economic activity (Hartley, 1995: 113–155; Rogerson, 1995: 311–317).

In functioning capitalist markets, firms develop products on their own initiative and consumers collectively decide with their purchasing decisions which production decisions should be rewarded with profits. In contrast to this view of how markets function, the nature of the arms industry is such that, according to Merton Park and Frederic Scherer, 'a market system in its entirety can never exist for the acquisition of weapons' (Peck and Scherer, 1962: 57). None of the preconditions for efficient markets exist in defence industries. States are the major (and only legitimate) consumer of armaments and also exercise the right to regulate domestic firms' exports. However, the role of states as purchasers is counterbalanced by the absence of competition in domestic markets.

With only one or two corporations capable of producing a product, states are confronted with arms producers that are monopolists or oligopolists, giving rise to information asymmetries that render it difficult for states to ascertain real costs of weapons or control corporate profits. Complicating matters further, weapons projects require such large research and development (R&D) investments that it is virtually impossible to raise the requisite funds from banks or capital markets. Consequently, states must pay up-front to develop the products they will ultimately purchase (Sandler and Hartley, 1995).

Due to the nature of the defence-industrial sector, the weapons acquisition process is best understood as the product of strategic interactions between four actors possessing different policy preferences (Adams, 1982; Laffort and Tirole, 1993; McAfee and McMillan, 1986). The state is the sponsor of research, regulator of commercial activities, purchaser of final products and end-user of the weapons produced, but because states are not unitary actors, *armed services* and *elected officials* control distinct facets of the acquisition process. Whereas military commanders define technical requirements and test candidate products, elected officials decide which weapons to buy from which producers. Meanwhile, *firms*, at home or abroad, design, develop and produce the armaments that states purchase. In addition to the three domestic groups detailed above, the *bureaucracies* of international institutions have come in recent years to play an increasing role in promoting policies, such as collaborative projects, common regulatory frameworks and the setting of technical standards.

Each of these groups has legitimate motivations for involving itself in the production of armaments and possesses distinct preferences on how weapons should be acquired.

In the eventuality of war, armed forces use armaments to protect states' interests and defend their inhabitants from aggression. As a result, military professionals seek to maximize the military power that can be acquired for a given defence budget. To this end, they generally prefer policies of market openness that can be considered secure sources of supply.[3] For many categories of equipment, comparative economic advantages dictate that foreign producers will offer better weapons, at lower prices, than domestic ones (Carver, 1989: 472). Moreover, importing weaponry has the advantage that mature products can be comparatively tested, while domestic acquisition entails committing a state to the lengthy and uncertain process of developing new products. Even if they acknowledge that the domestic production of weaponry is of intrinsic value, military professionals will strive to leverage the forces of competition, or at least contestability, to oblige firms to provide products at a reasonable cost (Chin, 2004; Dunne, 1995; Sorenson, 2009). In short, armed forces prefer a liberalized arms trade amongst allies and the use of competition to oblige corporations to provide effective weaponry at a reasonable cost.

As economic entities, firms seek to maximize profits, minimize risks and improve their long-term position in the market. Because monopolist corporations extract larger profits from states, firms prefer policies that perpetuate their privileged status within domestic armaments markets. Meanwhile, the allure of increased profits also leads corporations to favour liberal export policies. Thus, firms prefer national policies that protect domestic markets from foreign competition, while simultaneously promoting domestic arms exports abroad. However, because it is rarely possible for a firm to achieve protectionism domestically and liberal trade agreements internationally, firms prefer forms of international cooperation that suppress competition to liberal policies that limit their rent-seeking opportunities. Therefore, firms often lobby for international cartel or consortium arrangements that guarantee them a negotiated share of design and production work (Hartley, 2008: 307–308; Maulny, 2002).

In contrast to armed forces and defence firms, political leaders must balance national security and economic considerations. As the actors ultimately responsible for a states' security, they must take the international security environment into consideration when elaborating defence-industrial policies, and so they cannot disregard advice provided by military professionals. However, as political actors continually seek re-election, they are also sensitive to demands from domestic defence industries that contribute to electoral campaigns and provide employment (Braddon, 1995; Rundquist and Carsey, 2002). Moreover, because elected officials are responsible for the economic viability of their state, arguments about potential technological 'spin-offs' from military procurement programmes to the civilian economy have more sway over civilian than military authorities (Alic et al., 1992). Facing such contradictory pressures, elected leaders 'satisfice' in terms of both military capabilities and preserving jobs—pursuing both objectives, while maximizing neither.

In recent decades, the permanent bureaucracies of certain international organizations have also articulated specific preferences about armaments cooperation. Organizations, such as OCCAR and the EDA, now also possess substantial (48 and 110, respectively) staffs, which are capable of framing issues in a manner consonant with their interests. The European Commission, which is emerging as an actor in armaments collaboration, possesses even greater administrative resources. As with organizations in other domains, international bureaucracies prefer policies that maximize their size, wealth and autonomy (Allison and Zelikow, 1999; Wilson, 1989). Certain organizations also possess what can be described as a particular 'organizational essence', which they also promote (Halperin, 1974). From this perspective, the Commission, EDA and OCCAR all prefer increased international armaments cooperation as an end in itself.

Table 1 summarizes the objectives and preferences of the different groups involved in the formulation of defence policies.

While possessing distinct and, frequently, opposed interests, these four groups of actors utilize different techniques to promote their preferred outcomes. Because of their role as a state's designated experts on national security, military commanders can usually define technical requirements and judge whether equipment meets their specifications. However, firms know more than military commanders or elected leaders about the costs and risks inherent in developing and manufacturing products (Scherer, 1964: 204–213). Their substantial financial resources also enable them to attempt to influence state policy through lobbying and public relations efforts (Moravcsik, 1993).

Table 1. Objectives and preferences of actors in armaments sector.

Group	Objective	Preference
Armed forces	Maximize their state's military power by acquiring cost-effective weaponry	*Liberal policies* that enable them to buy the most effective weapons regardless of who produces them
Firms	Maximize their profits and long-term technological viability	*Protectionism* against potential commercial threats and *liberal* export policies towards potential markets; generally seek to *suppress competition*
Elected leaders	Promoting their state's security, while also winning re-election and encouraging economic growth	*Balancing* electoral, military and economic considerations leads to satisficing behaviour in each of these areas
International bureaucracies	Maximizing their own size, wealth and autonomy	*International cooperation* is an objective to be pursued in its own right

Meanwhile, through their hierarchical control over military organizations and power to fund defence procurement, elected leaders possess powerful levers over both groups. Finally, the bureaucracies of international organizations can attempt to frame issues in a manner conducive to achieving their ends (Mörth, 2003). Because of opposing preferences, bargaining, bluffing and brinksmanship are likely to characterize strategic interactions between military officers, political leaders, corporate executives and (in certain cases) international bureaucracies. Within this context, cooperative projects need at least the tactic support of each domestic group in order to succeed, yet any one of them can attempt to extract additional concessions from their partners by threatening to exercise a de facto or de jure veto over the project. The pages that follow examine how armaments institutions have reflected and promoted each of these groups' preferences.

Armaments institutions

Over time, the increasing complexity of armaments and the declining proportion of European resources committed to defence have rendered the cooperative acquisition of weaponry imperative. Economically, cooperative procurement should yield advantages in terms of shared R&D costs, greater economies of scale and improved learning economies (Hartley, 1995; Hartley and Martin, 1993; Matthews, 1992). However, as in other domains, institutions have proven necessary to resolve problems generated whenever sovereign states cooperate in sensitive domains (Keohane, 1984; North, 1990). This *coordinating* function of institutions has constituted since 1949 the fundamental rationale for the creation of European (and transatlantic) institutions whose purpose has been to foster armaments cooperation amongst member states. However, in addition to fulfilling vital coordinating functions, international institutions also play a *power-distributional* role insofar as they privilege certain societal groups vis-à-vis others (Thelen, 2009). Ultimately, the tension between the need to provide efficient international cooperation and the efforts of different groups to advance their interests generate continual pressures

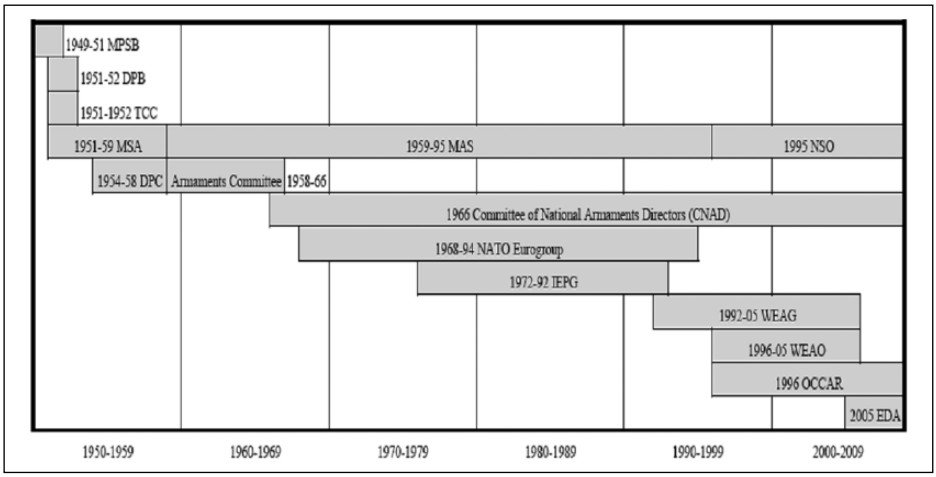

Figure 1. Selected international armaments institutions.

for institutional change. Figure 1 illustrates the evolving constellation of international armaments institutions over time.[4]

While the creation of armaments institutions was a rational response to structural conditions, their design has been subject to constant change. One reason for this lies in the uncertainties inherent in designing institutions to efficiently coordinate cooperation between states in any new domain. Within this context, it is only natural that the coalitions of actors that design institutions will enact reforms as experience demonstrates their necessity. Besides this imperative for improved efficiency, another dynamic driving institutional change can be found in the deliberate efforts of societal groups to contest their design. Given the divergent preferences of political, military and corporate actors, the fact that multiple forms of cooperative agreements are possible generates distribution problems (Koremenos et al., 2001: 775). Consequently, groups will promote institutional designs that enable them to pursue their preferences. Contrarily, when outcomes differ too widely from their preferences, they will use the resources at their disposal to sabotage collaborative projects or alter the design of international institutions (Moravcsik, 1993; Thelen, 2009). Within this context, armaments cooperation resembles an iterative two-level game, where international outcomes must be negotiated and amended to retain sufficient support from coalitions of domestic interest groups (Putnam, 1988).

A variety of institutional formats could theoretically be adopted to promote armaments cooperation. This study will focus on the impact of three dimensions of organizational design, as follows: (1) which domestic actors (elected leaders, military professionals and defence corporations) are granted a voice in international deliberations; (2) to what extent institutions' activities are centralized in the hands of international bureaucracies; and (3) whether the prevailing mode of governance is technocratic or democratic. In terms of *voice*, international armaments institutions can either include a wide range of actors in decision-making procedures or consciously exclude some for the benefit of others. In terms of *centralization*, institutions can vary from mere discussion forums to

Table 2. The design of armaments institutions.

Generation of organization	Institutions	Actors with voice	Centralization	Technocratic/ democratic
Phase I: 1949–1966	MPSB, DPB, TCC, MSA, NATO's Armaments Committee	Armed forces	Weak	Technocratic
Phase II: 1966–1996	CNAD, Eurogroup, IEPG	Elected leaders Corporations Armed forces	Weak	Democratic
Phase III: 1996-present	OCCAR, EDA, the European Commission	Elected leaders Corporations International armaments bureaucracies	Strong	Technocratic

bodies with strong centralized bureaucracies. Finally, in terms of ethos, institutions can either be based on the democratic principle that only elected leaders are fit to negotiate matters critical to a state's sovereignty or the technocratic principle that authority should be based 'on benign technical expertise rather than electoral manipulation' (Freeman, 2002: 890).

Examined according to these dimensions of institutional design, European institutions can be grouped into three categories that reflect broader trends in international organizational development and draw on lessons previously learned. Each category predominated at a specific time period, which is illustrated in Table 2.

Taking into consideration the institutional designs adopted over time, the remainder of this study will examine the following: (1) how arms institutions empowered or excluded categories of actors; (2) how preferences embodied in the procedures of different institutions shaped the outcome of collaborative programmes; and (3) which dynamics generated institutional change. Because prior analyses, including the works of Ulrika Mörth (2003), Seth Jones (2007) and Malena Britz (2010), limited their focus to examining intergovernmental and supranational developments since the end of the Cold War, applying the aforementioned perspectives to the analysis of European armaments cooperation over an extended period of time will provide new insights into the development of this field. To this end, one collaborative aircraft programme undertaken under the aegis of each of the three generations of armaments institutions will be scrutinized in a comparative fashion to determine how institutional designs shaped cooperative outcomes.

The first generation: military preferences predominate

Faced with a growing Soviet threat, European and North American states created the North Atlantic Treaty Organization (NATO) in 1949. Although a classic commitment to mutual defence lay at NATO's core (Article 5), the organization also sought to promote armaments cooperation between member states. Having never before been attempted, NATO's first secretary general, Hastings Ismay, characterized the organization's efforts at international armaments cooperation as 'an entirely new field of co-operation between

sovereign countries' (Ismay, n.d.: 130). Given the prominence of military commanders in NATO's early decision-making apparatus, military professionals occupied the primary position within NATO's early armaments institutions, which resulted in outcomes reflecting a military preference for optimizing the cost-effectiveness of international arms procurement through competitive bidding. However, the exclusion of political and industrial actors from the defence-industrial policymaking process fuelled domestic opposition to international collaboration of such magnitude that many states defected from cooperative initiatives, despite their advantages.

The forerunner of armaments institutions, the Military Production and Supply Board (MPSB), was established in 1949 under NATO's defence committee. In the eyes of its founders, the MPSB was to serve as a defence-industrial adjunct to NATO's nascent military command structure. The MPSB's charter accorded military officers the responsibility for establishing criteria for standardized armaments and defined the organization's mission as '[To] insure that, insofar as feasible, the military production and procurement programme supports defence plans effectively'. The charter further specified, 'The Board shall also work in close co-ordination with the military bodies on the promotion of standardization of parts and end products of military equipment'.[5] The MPSB consisted of a small London-based secretariat, a committee of national delegates, and an array of ad hoc working groups comprised of military personnel (Ismay, n.d.: 339; Masson, 2004: 186–187).

In early 1952, the insufficiencies of the MPSB prompted NATO to create a new institution, the Military Standardization Agency (MSA).[6] In a similar but more extensive fashion than its predecessor, the MSA concentrated authority in the hands of the middle-ranking military personnel comprising the MSA's three boards (for terrestrial, naval and aeronautical matters) and issue-specific working groups (Huston, 1984: 220–222). The basic mechanism actuating the MSA's standardization process was the ability of any NATO or national military command to propose the need for a common technical standard. By 1956, this procedure generated over 400 common standards (STANAGs).[7]

While the MSA focused on standards, other bodies concentrated on jointly producing weaponry. NATO efforts in this domain began tentatively under the Defence Production Board, but gathered force under an organization that eventually became known in 1958 as the Armaments Committee (Huston, 1984: 192–193). These institutions empowered military professionals in both national and multinational headquarters to initiate the collaborative process by suggesting that a common 'need' for a weapon existed (Huston, 1984, 194–205; Vandevanter, 1964).[8] Once a proposal was made, the member states' military representatives would discuss the characteristics of a common weapon within NATO's Military Committee. If a consensus emerged, it would be transmitted to NATO's Armaments Committee as a NATO Basic Military Requirement (NBMR). At this point, military and technical experts would oversee a competitive bidding process wherein qualified manufacturers would be given the opportunity to prepare proposals.[9] In theory, competition would oblige firms to run technical risks and accept low profit margins, enabling NATO's armed forces to maximize the military value of the weaponry that could be acquired for a given cost (Hartley and Martin, 1993: 202; Klein, Meckling and Mesthene, 1958).

Although differing on details, all first-generation armaments institutions were marked by their technocratic ethos, the dominant role accorded military professionals and their

low degree of centralization. Actuated by a technocratic belief that military professionals were the actors most important to armaments cooperation, the architects of first-generation institutions designed them to maximize their influence. In sharp contrast to this degree of military influence, elected leaders and corporate executives had no direct voice in the cooperative process. Likewise, the small permanent secretariats of first-generation institutions (under a dozen employees) restricted international bureaucracies to a supportive role (Connery and David, 1951: 335–338; Gordon, 1956; Masson, 2004: 186–187).

Given this form of institutional design, it should come as no surprise that first-generation institutions enabled military professionals to pursue their preferred course of leveraging liberal policy tools to maximize the cost-effectiveness of weapons acquisition. Perhaps inevitably, outcomes so conducive to military efficiency could not help but endanger corporate interests. To compete for NATO-wide contracts, defence industries would have to run greater technical risks and slash profit margins. Under these circumstances, most firms lobbied their governments to defect from cooperative weapons programmes. Because of their non-participation in programmes' formative stages, elected leaders acceded to corporate pressures (Vandevanter, 1964: 21–34).

No example better illustrates how military preferences shaped, while corporate and political opposition thwarted, first-generation armaments programmes than the NATO Lightweight Strike and Reconnaissance (LWSR) Aircraft. The LWSR programme was initiated in 1954 by an international group of officers at NATO's military headquarters who argued that European states needed an inexpensive mass-produced fighter-bomber capable of operating from unprepared landing strips. Once articulated, the proposal was debated and refined as it worked its way through NATO's military bureaucracy. After detailed technical specifications had been accepted, NATO invited a wide range of European firms to participate in the competitive tendering process (Vandevanter, 1964: 17–18). Ten British, French and Italian firms submitted bids, from which an international committee identified five as promising (Jackson, 2005: 128–133).

Ultimately, an Italian design, the Fiat G.91, was selected as the most cost-effective (Lopes, 1988). Validating the transparent mode of its selection, the G.91 was an exemplar of an inexpensive, rugged and reliable strike aircraft. However, because the Fiat corporation would have received the largest share of the production contracts to build the G.91, with other states' corporations receiving only subcontracts, rival defence firms lobbied their governments to withdraw. In France, both Dassault and Breguet opposed France's participating in the programme, while the United Kingdom's Folland sought to convince the British government to buy its losing design instead of the victorious Italian proposal. Because the process that selected the G.91 marginalized politicians' economic and employment concerns, elected leaders were ill-disposed to defend the aircraft. Consequently, almost all of Italy's partners (excepting West Germany) defected from the programme (Vandevanter, 1964: 19–20).

Both the fate of the G.91 and other major first-generation cooperative projects (i.e. NATO ASW, V/STOL fighter and V/STOL transport aircraft) illustrate how institutions shaped both which group's preferences served as the basis for policy and the outcomes of individual armaments programmes. By concentrating authority in the hands of military professionals, first-generation institutions ensured that armaments cooperation

would reflect military preferences for obtaining cost-effective armaments through liberal procurement procedures. However, by excluding key actors—such as political leaders and corporate representatives—from the policymaking process, these same institutions generated domestic political dynamics inimical to the success of most international armaments initiatives.

Thus, while the military domination of the cooperation process could result in cost-effective armaments, it furnished an insufficient basis for building the political coalitions needed to successfully carry through with cooperative programmes. The basic problem, that powerful domestic actors can thwart the implementation of agreements when they feel that their interests are insufficiently taken into account, is endemic to international cooperation in general (Putnam, 1988). As a result, political leaders cancelled all but a handful of the 50 first-generation projects launched and cooperative endeavours succeeded in fulfilling less than five per cent of European states' armament needs during this period (Hayward, 1997; Vandevanter, 1964: 2). Ultimately, the repeated failure of cooperative armaments efforts in the mid-1960s led many states to conclude that the institutions themselves were 'in crisis' and needed urgent reform.

The second generation: bringing elected leaders in

The failure of first-generation armaments institutions to generate the desired degree of cooperation led European policymakers to develop new structures to rectify their predecessors' shortcomings. Within this context, opposition from firms was the Achilles' heel of first-generation projects. However, corporate lobbying succeeded because elected leaders' miniscule role in armaments institutions left them with little motivation to shield cooperative projects from corporate critiques. As a result, the architects of second-generation institutions recognized the necessity of engaging elected leaders and, to a lesser extent, corporate actors. As these new actors acquired a larger role, their preferences shaped policy outcomes. Concomitantly, the impact of military preferences declined in proportion to armed forces' relative loss of influence within the process.

In 1966, the deficiencies of first-generation institutions led NATO member states to abolish the most emblematic of them, the Armaments Committee, along with the NBMR procedural repertoire. In their place European (and North American) policymakers created new institutions based on the insight that only the highest-level representatives of government can assemble the political, military and technological perspectives to launch a project (Draper, 1990, 23). Generating political support therefore replaced optimizing a weapon's technical characteristics as the leitmotif of armaments institutions (Vandevanter, 1964, 93). The first of the new institutions, NATO's Committee of National Armaments Directors (CNAD), was formed in 1966. In 1968, this institution was supplemented by NATO's Eurogroup, which fulfilled many of the same roles as the CNAD, but was comprised of only European states.[10] However, France's unwillingness to participate in NATO institutions meant that it remained aloof from both the CNAD and Eurogroup. To embrace the French, European states established the Independent European Programme Group (IEPG) in 1976 (Schlotter, 1979).

Despite differing memberships, these institutions (CNAD, Eurogroup and IEPG) were characterized by an absence of centralized bureaucracies and by the dominant role

accorded elected leaders. Indeed, second-generation institutions featured miniscule secretariats (five personnel in the IEPG's case) whose sole function was to organize forums for national procurement directors to meet regularly and discuss opportunities to collaborate. Because they answer to cabinet ministers and are politically appointed, procurement directors' behaviour reflects elected leaders' preferences (Kirby, 1979). In 1984, the influence of elected leaders over these structures was enhanced further when the IEPG began to meet at the ministerial level (Bauer, 1992: 40–41). Within this context, only defence ministers and national armaments directors wielded the authority to initiate new projects and negotiate their industrial modalities. Military professionals were restricted to sub-committees, where they enacted initiatives launched by political leaders and provided technical advice.

While enhancing political control of armaments cooperation constituted the primary thrust of institutional reforms, the architects of second-generation armaments institutions also developed mechanisms for corporations to pursue their preferences. To this end in 1968, NATO encouraged member states' defence industries to create the NATO Industrial Advisory Group (NIAG). Later in 1976, an analogous European Defense Industries Group (EDIG) was formed to enable European defence industries to articulate their preferences. Although neither body initially had an official role, armaments institutions regularly solicited their advice (Guay, 1997: 11–14). The role of these bodies was strengthened in 1984 when the EDIG was designated an official advisory body to the IEPG (Bauer, 1992: 40–41).

By elevating elected leaders' influence, enabling corporations to express themselves and relegating military professionals to an auxiliary role, second-generation institutions enhanced the abilities of political leaders and corporations to pursue their preferences and, thereby, shaped the character of the ensuing cooperation. Rather than focusing on military performance and cost-effectiveness, second-generation institutions embodied General (USA) E Vandevanter's prescient advice that 'political or economic *quids pro quo* and the distribution of profits through allocation of subcontracts for component parts can persuade nations to join in a common endeavor'. However, as Vandevanter predicted, 'This addition of non-military factors changes the process from a search for the "best" weapon to bargaining for agreement on an "acceptable" one' (Vandevanter, 1964: 93).

Given that political and corporate preferences now dominated the cooperative process, it is unsurprising that 'acceptable' procedures departed from earlier visions of military-technical optimality. To ensure employment in marginal districts and secure corporate support, second-generation projects dispensed with the competitive tendering of their predecessors. Instead, projects were now managed by international corporate consortia in which the role of each firm was negotiated on the basis of 'fair return'. This meant that corporations were guaranteed contracts proportional to their state's monetary participation and regardless of their cost-efficiency (Hartley, 2008: 307–308).

By satisfying elected leaders' concerns about employment and corporate desires for guaranteed profits, second-generation cooperative projects benefited from increased political support. However, the relegation of military-technical considerations to a subordinate role opened the door to wasteful cost overruns and performance shortfalls. For example, allocating contracts through fair return practices created few incentives for

firms to suppress costs or accept technical risks. Indeed, firms could instrumentalize non-competitive contracts to underwrite the costs of machine tools and production facilities not directly attributable to the cooperative project (Scherer, 1964: 210). Worsening matters, the politicized process whereby firms negotiated work-shares encouraged them to acquire contracts that they were *least capable* of fulfilling, because such contracts paradoxically maximized the value of the new technologies and production processes they would master at public expense (Dahlin and Enander, 1997: 31–35).

The example of the MRCA/Tornado combat aircraft illustrates how second-generation armaments institutions shaped individual collaborative projects. Through discussions at Eurogroup and the CNAD, procurement directors from Belgium, Canada, Italy, the Netherlands, the United Kingdom and West Germany identified a mutual need for new aircraft. After further discussions, the governments of three states—Italy, the United Kingdom and West Germany—decided in 1969 to collaboratively fulfil their requirements for new aircraft.[11] To this end, they established an ad hoc NATO agency, the NATO MRCA Development and Production Agency (NAMMA) to serve as a vehicle for their endeavour (Draper, 1990: 40).

From the outset, political and corporate domination of the collaborative process manifested itself in the decisions that framed the project's objectives and structures. To begin with, if left to military professionals, the MRCA/Tornado would never have been built. While all three states needed a new aircraft, their military requirements differed enormously, with the Italians needing short-range fighters, the Germans short-range fighter-bombers, and the British long-range fighters and strife aircraft. No amount of technical artistry could have generated a cost-effective aircraft capable of fulfilling all of these roles. However, the procurement directors and defence ministers who negotiated the MRCA/Tornado accord cared less about these military-technical considerations than the political and economic benefits obtainable through collaboration.[12] Therefore, to sustain domestic employment and channel procurement spending to 'national champion' firms, procurement directors agreed on military requirements (for a long-range fighter-bomber) that failed to meet any air force's needs (Bennell, 2002).

When it came to the MRCA/Tornado's construction, second-generation institutions gave free rein to corporate preferences. The unwillingness of any state's national champion to accept a position of hierarchic inferiority vis-à-vis its partners led to the creation of inefficient joint venture structures—Panavia GmbH and Turbo-Union Ltd—where unanimous voting resolved important issues (Lewis, 2002; Thornber, 2002). By permitting firms to apportion contacts on the basis of fair returns, second-generation institutions enabled them to pursue technical goals by acquiring contracts they were least qualified to fulfil (Walker, 1974). For example, whereas British firms had experience with complex wing-pivot mechanisms and West German firms had none, Germany's MBB and Britain's BAC agreed to give the former the contract (Willox, 2002: 44). In addition to this economically perverse, but corporately beneficial allocation of work-shares, corporate influence also resulted in the extensive duplication of industrial functions. In one extreme case, firms in separate countries produced identical circuit boards for the aircraft's avionics (Walker, 1974: 290–291).

Ultimately, by empowering elected leaders and corporate executives to pursue their preferences, second-generation armaments institutions ensured strong political support

for programmes such as the MRCA/Tornado. As a result, none of the three partners defected from the project and 806 of the resulting aircraft were procured (Lake and Crutch, 2000: 13). However, this success at ensuring the project's completion must be weighed against the Tornado/MRCA's poor cost-effectiveness and military value. In terms of cost-effectiveness, the British National Audit Office estimates that inefficient management led to the aircraft's development costing 61 per cent higher than should have been the case (NAO, 2001: 16). In terms of production costs, the aircraft's low value-for-money deterred all foreign clients, except Saudi Arabia, from purchasing it. To make matters worse, the political compromise on military requirements that lay at the base of the MRCA/Tornado guaranteed that the aircraft generated capability gaps in each of the air forces that acquired it.

In sum, second-generation institutions resolved the problem of states defecting from multinational projects by politicizing the cooperative process and granting corporate actors a voice in it. The institutions that accomplished this outcome (CNAD, Eurogroup and IEPG) were little more than forums where miniscule secretariats organized regular meetings for national procurement directors and defence ministers. Underlying this form of institutional design was a belief that credible political commitments were more important to cooperation than the adroit management of technical and military issues. As the record of second-generation projects attests, this calculus proved correct insofar as it came to launching new projects and mitigating the danger of partners defecting.

This enabled the completion of 51 major projects—including Tornado aircraft, Milan missiles and tripartite minesweepers—a 10-fold increase compared to the first generation of armaments collaboration (Hébert, 2004: 201–202). Consequently, the proportion of large states' procurement budgets that was spent on collaboratively produced armaments rose three-fold, from 5 to 15 per cent, between 1965 and 1989 (Taylor, 1990: 63–64). However, the de-emphasis of military expertise and uncritical embrace of corporate preferences meant that second-generation cooperation proved exceptionally wasteful. Reflecting on this state-of-affairs, the French general staff ruefully concluded that '[In armament cooperation] military considerations should never be subordinated to those of industry'.[13]

The third generation: international bureaucracies as independent actors

Although second-generation institutions resolved the defection problem, the wastefulness of the cooperative process obviated many of cooperation's putative advantages. This became apparent in the early 1990s as scandalous cost overruns were identified in high-profile projects, including the Eurofighter aircraft, NH-90 transport helicopter and Tiger attack helicopter (Dahlin and Enander, 1997: 31–35; NAO, 1995). Facing this situation, one procurement official openly lamented that, 'These collaborative consortia are in reality enormous monopolies that make it very difficult for nations to derive or establish value for money' (Norriss, 1999: 173). With defence budgets in decline after the Cold War and a transatlantic 'capabilities gap' evident since the 1991 Gulf War, European armaments cooperation needed improvement. Since the mid-1990s, Europe's response to

this challenge has been the creation of a third generation of armaments institutions—including OCCAR, the EDA and, increasingly, the European Commission—whose centralization of administrative resources and expertise is designed to enable them to set agendas and guide the cooperative process.

The need to improve the efficacy of armaments institutions was first articulated in the late 1980s by British Defence Minister Michael Heseltine and former European Commissioner Henk Vredling (Brozoska and Lock, 1992; Heseltine, 1986). In the early 1990s, the European Commission added its weight by championing the liberalization of European armaments markets (COM (90) 600 final, 1990), the creation of a European Armaments Agency (DG III, 1997) and an increase in the Union's jurisdiction (COM (97) 583 final, 1997). National governments also recognized the need for reform and developed proposals to this end (Dahlin and Enander, 1997: 112–122; NAO, 1991: 5, 2001).

European states drew inspiration for third-generation institutions from concepts developed by theorists of 'the new public management' (Mawdsley, 2003: 96–97). Key to this reform agenda was the establishment of technocratic agencies possessing centralized administrative resources. In terms of policy tools, agencies could improve the efficiency of armaments cooperation by: providing a basis for systematic networking between national authorities; monitoring and diffusing information on member states' defence-industrial activities; elaborating 'codes of conduct' and compendiums of 'best practices'; and setting the agenda for further reforms (Bátora, 2009: 1080–1085). Inevitably, institutions capable of fulfilling the above-mentioned tasks needed significantly more centralized resources than their predecessors. In 2002, the European Commission endorsed the creation of powerful agencies along these lines (COM (02) 718 final, 2002).

The first attempt to create new institutions occurred between 1992 and 1996 when European states formed the Western European Armaments Group (WEAG) and the Western European Armaments Organization (WEAO). Soon, however, the deficiencies of these institutions led to their replacement by more robust alternatives (Mawdsley, 2002: 10). In 1996, Europe's four largest arms-producing states—France, Italy, Germany and the United Kingdom—created the first true third-generation institution, the OCCAR, whose purpose was to mitigate inefficiencies that hitherto plagued the joint development of weaponry. To this end, it was supposed to: introduce competitive fixed-price contracting; develop and diffuse procurement practices benchmarked against the highest standards; and implement a 'global-balance' of work-share whereby 'fair return' would apply over a range of projects (Mawdsley, 2003: 98–101). To enact these measures, OCCAR's architects endowed it with a large international staff of 48 personnel or nearly 10 times the centralized administrative resources as such earlier institutions as the IEPG.[14]

To address cooperation more broadly, the European Council established the EDA in 2005. Envisioned as *the* institution that would set the agenda for future armaments cooperation, the EDA was empowered to: collect and diffuse information on states' defence-industrial activities; develop 'best practices' and 'codes of conduct' for international collaboration; and encourage the integration of European armaments markets (Bátora, 2009; Van Diemen de Jel, 2005). To achieve these objectives, the EDA was endowed with a large permanent staff, whose size has grown from 80 to 110 personnel (compared with 16 for the WEAG and WEAO combined). To enhance the EDA's ability to influence

defence industries, its architects also provided it with a R&D budget that the agency's staff can apportion on the basis of competitive bidding. Although involving only 0.7 per cent of European defence R&D spending, the EDA's ability to allocate €70 million provides it with much greater leverage vis-à-vis industry than its predecessors possessed (EDA, 2007).[15]

While OCCAR and EDA are new agencies, third-generation armaments cooperation has also witnessed a paragon of centralized international administration—the European Commission—intrude into this domain. Traditionally, the Commission's exclusion from defence-industrial issues was justified by Article 223b of the 1957 Rome Treaty (Article 296, Amsterdam Treaty). However, the prominence of dual-use technologies and the EU's growing role in external affairs have enabled the Commission's directorates-general I and III to seek an active role in armaments cooperation (Mörth, 2003). To this end, the Commission's 2004 Green Paper on Defence Procurement articulated its desire for extended authority over issues hitherto excluded under Article 296 (COM (04) 608 final, 2004). More concretely, the Commission obtained €1.4 billion for 'security research' within its 2007–2013 framework budget for R&D (Official Journal of the European Union, 2006). This was followed, in 2009, by the Council's adoption of the Directive of Defence Procurement, which limits the application of Article 296 to 'truly exceptional cases' and thereby opened the door to the Commission's playing a regulatory role in defence markets (Schmitt, 2009).

Overseen by new institutions, third-generation armaments cooperation differed from earlier endeavours. With international bureaucracies better resourced, international civil servants have begun playing a major role arguing for collaborative projects and attempting to set the agenda for pan-European regulation. To expand their institutions' authority, technocrats established dense ties with the EDIG and its successor the AeroSpace and Defence (ASD) Industries Association of Europe (Aircraft Sectoral Group, 2006). Indeed, according to a senior EDA official, the ASD has been the EDA's chief partner when it has come to developing codes of conduct and other forms of 'soft' regulation (Hammarström, 2008: 91–92). However, while interactions between armaments institutions and defence industries grew, the influence of military professionals declined. Because third-generation institutions liaise directly with industry and national procurement agencies, they constitute an additional layer separating armed forces from defence contractors. As a result, there is a growing danger that international cooperation will not provide military professionals with the weapons they consider necessary (Mawdsley, 2003: 106–107).

Since the creation of third-generation armaments institutions, the largest European project undertaken has been the A400M transport aircraft. Although negotiations about a common European transport began in 1983, the decision to launch the project in 1997 meant that OCCAR was poised to use it to prove how technocratic management could improve the efficiency of armaments collaboration. To achieve this objective, OCCAR had to both maximize the cost-efficiency of the project and convince a critical number of states to join it. Balancing these imperatives for efficiency and political support demanded all of the skills that OCCAR's specialist staff could muster (Mawdsley, 2010).

To guarantee the programme's cost-effectiveness, OCCAR broke with the uncompetitive consortium-based contracting of the past and invited Western European, Eastern

European and American corporations to submit bids. Within this context, OCCAR ostensibly viewed Airbus, Boeing, Lockheed, Antonov and Russia's Medium Range Transport Aircraft Corporation as credible prime contractors for Europe's future aircraft. However, despite opening bidding to non-European corporations, the need to assemble a political coalition to back the project rendered the selection of a non-European contractor problematic. Therefore, to prevent a non-European firm from winning on technical merits, OCCAR developed technical specifications that existing American and Ukrainian aircraft could not fulfil. Within this context, by threatening, but not eliminating the Airbus-led consortium's position as a European monopolist, OCCAR negotiated a contract beneficial to its member states (Masseret and Gautier, 2009: 20–24).

Despite favouritism to European contractors, the contested bidding process obliged the Airbus-led consortium to offer innovative capabilities, reduce its profit margins and improve its work-share arrangements. As a result, the fixed-price contract OCCAR concluded with Airbus Military Company (AMC) was exceptionally favourable to European states. In 2003, AMC promised to begin deliveries in six years of 180 highly capable transport aircraft for a total cost of €20 billion (Sparaco, 2010). In principle, corporations would pay substantial penalties if they failed to deliver the promised goods (Morrocco, 2001).

Unfortunately, early successes at managing the A400M proved illusory. Although AMC had originally promised inexpensive cutting-edge aircraft, the A400M schedule began slipping and its costs exploded once the project began. By 2009, the A400M was estimated 4 years (80 per cent) behind schedule and €11 billion (55 per cent) over budget. As costs rose, corporations lobbied to renegotiate the original contract, which they characterized as 'a mistake… with huge technical challenges and an unrealistic schedule' (Morrison and Kingsley-Jones, 2010). EADS' (AMC's largest partner) CEO Tom Enders even threatened to scrap the project if states would not spend more than originally anticipated (Wall, 2010). Ultimately, corporate brinksmanship and fears of losing the sunk-costs already invested led states to accept higher prices and reduced performance (Anonymous, 2010). Under these conditions, a foreign aircraft purchased off-the-shelf would have been more beneficial to European states than a collaborative one.

Both the conduct and shortcomings of the A400M project demonstrate the limits of third-generation armaments institutions. While centralized administrative resources and a technocratic ethos enabled OCCAR to negotiate a beneficial contract, monopolistic firms' political connections enabled them to renegotiate the schedule, prices and performance they originally conceded to. Consequently, OCCAR's true contribution was limited to robust programme management, which prevented the recurrence of the worst excesses of the fair return contracting that plagued second-generation projects. However, OCCAR's failure to achieve more can be attributed to the growing power and influence of defence industries. After encouraging manufacturers to merge into larger ensembles and collaborating with them to integrate armaments markets, third-generation institutions now discovered that they lacked the resources to hold corporations accountable (Masseret and Gautier, 2009: 55–61).

Moreover, with cooperation driven by interactions between international bureaucracies, industrial groups and national procurement agencies, the military end-users of defence products found themselves increasingly marginalized and their desire for

cost-effective weaponry subverted by organizations such as OCCAR and the EDA. Indeed, former EDA chairman Nick Witney reflected that one major problem with European armaments cooperation was that 'To date national chiefs of defence staff have been wary of the Agency [EDA]' and urged that these actors should be incorporated into that organization's steering board (Witney, 2008: 35). To manage armaments organizations that will be even more complex and inclusive than those that currently exist, Witney also argues that future organizations will require staffs much larger than the 110 personnel currently assigned to the EDA. Nevertheless, however inefficient the process has been since the end of the Cold War, third-generation institutions have fostered increased European cooperation, such that 23 per cent of European armaments today have collaborative origins (Hammarström, 2008: 92).

Conclusion

To conclude, an analytic approach that explores the relationship between domestic defence-industrial actors and the structure of international decision-making processes generates new insights into the dynamics driving cooperation in the field of armaments. Indeed, the structure of armaments organizations has a decisive impact on both domestic defence-industrial actors' ability to pursue their policy preferences and the ultimate outcomes of cooperative armaments projects. Those domestic defence-industrial actors who participate in European-level decision-making processes are better able to pursue their policy preferences than those who are excluded from doing so. However, excluded groups generally undermine cooperative projects to the extent they can.

Consequently, the need to incorporate or otherwise co-opt domestic actors with de facto veto powers over collaborative arrangements has been a driving force behind the evolution of armaments institutions. Within this context, the range of actors represented in organizations has expanded over time, facilitating a gradual expansion in the volume of European armaments cooperation. However, the greater power accorded political and corporate actors and the increased complexity of international decision-making processes has proven detrimental to the cost-effectiveness of cooperative weapons. Thus, the institutional measures necessary to ensure the political viability of cooperative projects paradoxically reduce their military and economic value to states.

As the case studies described above demonstrate, the structure of European armaments organizations has a decisive impact on domestic actors' ability to pursue their preferences. Groups incorporated into European-level decision-making processes possess a decisive advantage over those that are not. For example, military professionals exploited their privileged position in early armaments organizations to structure collaborative armaments projects in such a way that economic competition obliged corporations to provide cost-effective solutions to their military requirements. Later, as the influence of political and corporate actors grew, these groups imposed their own preferences for employment-preserving fair return work-share practices and guaranteed corporate profit margins. Thus, it is clear that the identity of the actors involved in international negotiations over armaments cooperation critically shapes which groups' preferences will become the basis for collaborative policies.

However, having a high degree of influence within European armaments organizations does not necessarily translate into weapons being produced along the lines that a group prefers. The reason for this is that groups excluded from collaborative decision-making processes use the power resources at their disposal to undermine cooperative armaments projects. Within this context, politicians cancelled projects when they felt their employment and electoral concerns were not being met and corporations lobbied their governments against projects when they calculated that doing so was in their interest. Later, as their influence within collaborative decision-making processes waned, military professionals publicly criticized projects and argued for alternatives when they felt that their requirements were not being met. Consequently, one sees that the fate of cooperative armaments projects depends not only on which groups organizations empower to pursue their preferences, but also on the ability of excluded actors to thwart their initiatives. However, as the case studies demonstrate, not all groups have been equal in the latter respect, with elected leaders and corporations possessing a greater capability than military organizations to undermine those projects of which they disapprove.

In response to this dynamic, the architects of European armaments organizations continually sought to incorporate domestic actors who might otherwise thwart efforts at armaments collaboration into international decision-making processes. Consequently, political leaders' cancellation of many first-generation projects led the architects of later organizations to give them a greater voice, first by empowering national procurement directors (in the mid-1960s) and then defence ministers (in the mid-1980s) to direct the activities of armaments organizations. A similar evolution occurred with defence industries, which were first encouraged to establish a representative industrial association and then consulted on an increasingly official and frequent basis. Indeed, when examined over the long term, the effort to co-opt actors who could oppose collaboration has constituted one of the primary forces driving the development of European armaments organizations.

The number of actors involved in armaments organizations' decision-making processes increased steadily throughout the period examined as a result of incorporating domestic veto players into international negotiations. Whereas first-generation organizations empowered the representatives of states' armed forces to the exclusion of other groups, their successors granted political and corporate actors an ever-increasing role. Moreover, with larger numbers of domestic actors involved in international decision-making, armaments organizations became more complex and needed greater centralized resources in the form of larger secretariats and expanded budgets to manage their affairs. Thus, whereas the largest armaments organization possessed only five permanent staff in the 1970s, its successors would possess over 15 in the 1990s and over 100 by 2010.[16] Even then, as Witney argues, the human and financial resources available to today's armaments organizations are insufficient to manage projects that must take the discordant interests of multiple domestic actors from 26 member states into account (Witney, 2008: 35).[17]

Nevertheless, the incorporation of an increasing number of domestic actors into international decision-making processes permitted a steady, but significant expansion in the volume of armaments collaboration. Thus, whereas all but a handful of the 50 projects launched under first-generation organizations were cancelled due to opposition from domestic actors, preventing cooperative endeavours from fulfilling more than five per

Table 3. Institutions and project outcomes.

Generation of organization	Exemplary project	Strengths	Weaknesses
Phase I: 1949–1966	NATO LWSR project	Liberal competitive process leads to the selection of an excellent cost-effective design, the FIAT G.91, which meets military requirements.	Domestic pressure from losing firms and insufficient involvement of political leaders in decision-making leads states to defect.
Phase II: 1966–1996	MRCA/ Tornado	Politically led negotiations and consultations with corporate actors lead to a robust tripartite coalition. No states defect; 806 aircraft are produced.	Programme afflicted by economic inefficiencies because of uncompetitive fair return work-share arrangements. Compromising on military requirements satisfies no states' armed forces.
Phase III: 1996-present	A400M Transport	Technocratically managed bidding leads to fixed-price contract for rapid-delivery of cost-effective aircraft. Elected leaders and corporate actors inclusion generates political support.	Agreement takes insufficient account of military needs. Once sunk costs are committed corporations sought to renegotiate their contract.

cent of their members' armaments needs, succeeding generations of more-inclusive organizations proved better at nurturing cooperative projects through to completion (Hayward, 1997; Vandevanter, 1964: 2). Indeed, the proportion of European armaments produced cooperatively progressively grew to 15 per cent under second-generation institutions and 23 per cent under present-day third-generation institutions (Hammarström, 2008: 92; Taylor, 1990: 63–64). Today, Europe cooperatively produces nearly twice as many arms (by value) than it imports from the United States and the EDA's goal that cooperative projects should account for one-third of European procurement spending does not appear farfetched. Thus, based on Europe's experience, including domestic players who could potentially veto projects in international decision-making processes appears to be a prerequisite for the completion of cooperative armaments projects.

However, the greater frequency of armaments cooperation has not translated into the production of more cost-effective weaponry. To the contrary, the increasing role accorded to political leaders and corporate executives from the mid-1960s onwards enabled these groups to impose their preference for forms of international cooperation that suppressed competition and, thereby, guaranteed domestic employment and corporate profit margins. Likewise, the increased complexity of decision-making processes that embraced a larger number of actors also complicated the management of cooperative projects and arguably resulted in a further decline in the economic competitiveness of European armaments. Thus, as Table 3 illustrates, the same institutional measures that encouraged critical domestic interest groups to support cooperative projects undermined cooperative weapons' cost-effectiveness.

As these case studies suggest, the institutional requirements for assembling a multinational coalition of domestic defence-industrial actors capable of seeing a project through from conception to production may be irreconcilably opposed to those needed to ensure the cost-effective acquisition of needed weapons systems.

If the past is any guide to the future, the need to strike a balance in how domestic defence-industrial actors are represented will continue driving the development of European armaments organizations. Indeed, the outcomes of recent projects suggest that military leaders' declining ability to promote their preference for cost-effective procurement policies enabled political and corporate actors to subordinate international armaments projects to their own ends. Consequently, many now believe that military leaders' role in collaborative decision-making should be strengthened to counterbalance the greater influence these other actors have acquired. Likewise, the difficult task of overseeing monopolistic corporate consortiums' behaviour and holding them accountable for the contracts they sign has led others to argue for a further strengthening of European armaments organizations' bureaucracies. In the case that either of the above-mentioned reforms is implemented, European armaments organizations will continue to grow in size and complexity, in pursuit of the elusive goal of enhancing both the political viability and economic efficiency of European armaments collaboration.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Notes

1. This article draws extensively from archival documents accessed at France's Service Historique de la Défense (SHD), The National Archives (TNA) of the United Kingdom, and Canada's Library and Archives of Canada (LAC). Recent documents and studies from the European Commission (COM) and British National Audit Office (NAO) are also examined.
2. The USA spends approximately $140 billion annually on defence procurement compared with $43 billion by the EU's 27 member states. Moreover, the fragmentation of the European market means that Europe's largest states' procurement expenditures (the United Kingdom, France and Germany each spend between $7–11 billion per year) have been overtaken by the expenditures of China ($26 billion), Russia ($16 billion) and Japan ($9 billion) (Jones, Candreva and DeVore, 2012: 405–406). The transatlantic arms trade balance has traditionally been unfavourable to Europe, with US exports accounting for 12 per cent of European procurement spending, while EU exports account for only 1.5 per cent of US procurement spending (DG Enterprise, 2010: 16).
3. The states that constitute exceptions to this rule are those, such as contemporary Egypt and pre-1985 Brazil, where senior military officers manage state-owned defence industries. In these cases, the personal gain and patronage benefits that officers can gain through the domestic production of armaments lead military establishments to favour this course of action even when it is economically inefficient (Feiler, 1998). After waves of privatization and managerial reform, none of the EU's current or potential members fit into this category.
4. The organizations in the table will be discussed in the following pages. The acronyms refer to the following organizations: Military Production and Supply Board (MPSB); Defense Production Board (DPB); Temporary Council Committee (TCC), Military Standardization Agency (MSA); Military Agency for Standardization (MAS); NATO Standardisation

Organisation (NSO); Defence Production Committee (DPC); Armaments Committee (AC); Conference of National Armaments Directors (CNAD); Independent European Programme Group (IEPG); Western European Armaments Group (WEAG); Western European Armaments Organization (WEAO); Organisation Conjointe de Coopération en Martières d'Armement (OCCAR); and European Defence Agency (EDA).

5. NAC, *Final Communiqué: The Council establishes a Defence Financial and Economic Committee and a Military Production and Supply Board*. (18 November 1949). NATO Official Texts: http://www.nato.int/cps/en/SID-2788FECD-8FACF71E/natolive/official_texts_17114.htm.
6. TNA FO 371/94122 Ottawa Telegram no. 9 to F.O., 17 September 1951.
7. TNA FO 371/124872 M.R: Starkey, WU Department, 14 December 1956.
8. LAC RG 25/114 NATO Roundup No. 1, 12 May 1951.
9. LAC RG 24/21638 Study of NBMR Procedures, 1965.
10. Communiqué issued by the Defence Ministers of Eurogroup with Annex on Principles of Equipment Collaboration, Brussels, 23 May 1972.
11. TNA PREM 15/1374 Zuckerman to Prime Minister, The MRCA, 8 July 1970.
12. TNA PREM 15/1374 Discussion between Lord Carrington and Herr Schmidt, 20 November 1970.
13. SHD 4S47 EMA, Mémoire sur l'évolution de la défense européenne, 1 August 1973.
14. This does not include 180 personnel dedicated to individual projects. Interview with Paul Haccuria, Head of OCCAR Public Relations (5 April 2010).
15. Ibid.
16. Interview with Linnenkamp (17 March 2010).
17. One EU member, Denmark, is not an EDA member.

References

Adams G (1982) *Iron Triangle: The Politics of Defense Contracting*. New Brunswick, NJ: Transaction Publishers.

Aircraft Sectoral Group (ASD) (2006) *Vision for the European Military Aircraft Industry*. Brussels: ASD.

Alic J, Branscomb L and Brooks H et al. (1992) *Beyond Spinoff: Military and Commercial Technologies in a Changing World*. Boston, MA: Harvard Business School.

Allison G and Zelikow P (1999) *Essence of Decision: Explaining the Cuban Missile Crisis*. 2nd ed. New York: Longman.

Anonymous (2010) Too big to fail. *Flight International* 177: 5.

Bátora J (2009) European Defence Agency: a flashpoint of institutional logics. *West European Politics* 32(6): 1075–1098.

Bauer H (1992) Institutional frameworks for integration of arms production. In: Brozoska M and Lock P (eds) *Restructuring of Arms Production in Western Europe*. Oxford: Oxford University Press, pp. 36–43.

Bennell A (2002) Air staff studies and political background. In: Jefford CG (ed.) *Birth of the Tornado*. Oxford: RAF Historical Society, pp. 13–22.

Braddon D (1995) Regional impact of defense expenditure. In: Sandler T and Hartley K (eds) *Handbook of Defense Economics*, vol. 1. Amsterdam: Elsevier, pp. 491–522.

Britz M (2010) The role of marketization in the Europeanization of Defense Industry Policy. *Bulletin of Science, Technology & Society* 30(3): 176–184.

Britz M and Eriksson A (2005) The European Security and Defence Policy: a fourth system of European Foreign Policy? *Politique Européenne* 17(3): 35–62.

Brozoska M and Lock P (1992) *Restructuring of Arms Production in Western Europe. (SIPRI)*. Oxford: Oxford University Press.
Carver M (1989) *Out of Step: The Memoirs of Field Marshal Michael Carver*. London: Hutchinson.
Chin W (2004) *British Weapons Acquisition Policy and the Futility of Reform*. Aldershot: Ashgate.
COM (02) 718 final (2002) *The Operating Framework for the European Regulatory Agencies*. Brussels: European Commission.
COM (04) 608 final (2004) *Defence Procurement*. Brussels: European Commission.
COM (90) 600 final (1990) *Commission Opinion of 21 October 1990 on the Proposal for Amendment of the Treaty Establishing the European Community with a View to Political Union*. Brussels: European Commission.
COM (97) 583 final (1997) *Implementing European Union Strategy on Defence-Related Industries*. Brussels: European Commission.
Connery R and David R (1951) The Mutual Defense Assistance Program. *American Political Science Review* 45(2): 321–347.
Dahlin F and Enander O (1997) *European Armaments Collaboration: A Way to Secure Adaptive Capability*. Stockholm: FOA.
DG III (1997) *Draft Action Plan for the Defence-Related Industry*. Brussels: European Communities.
DG Enterprise (2010) *The Nature and Impacts of Barriers to Trade with the United States for European Defence Industries*. Brussels: European Communities.
Draper A (1990) *European Defence Equipment Collaboration: Britain's Involvement*, 1957–87. London: Macmillan.
Dunne PJ (1995) The defense industrial base. In: Hartley K and Sandler T (eds) *Handbook of Defense Economics*. Amsterdam: Elsevier, pp. 399–430.
EDA (2007) *Defence Facts*. Brussels: European Union.
Feiler G (1998) The military industries of the Arab World in the 1990s. In: Inbar E and Zilberfarb B(eds) *The Politics and Economics of Defence Industries*. London: Frank Cass, pp. 165–200.
Freeman J (2002) Competing commitments: technocracy and democracy in the design of Monetary Institutions. *International Organization* 56(4): 889–910.
Gordon L (1956) Aspects of coalition diplomacy – the NATO experience. *International Organization* 10(4): 529–543.
Guay T (1997) Interest groups and European Union Policymaking: the influence of defense industry interests. Paper presented at the 1997 European Studies Association conference.
Halperin M (1974) *Bureaucratic Politics and Foreign Policy*. Washington, DC: Brookings Institution Press.
Hammarström U (2008) A strong European defence industry: what needs to be done. *RUSI Defence Systems* 11(1): 90–93.
Hartley K (1995) Industrial policies in the defense sector. In: Hartley K and Sandler T (eds) *Handbook of Defense Economics*, vol. 1. Amsterdam: Elsevier, pp. 459–489.
Hartley K (2008) Collaboration and European defence industrial policy. *Defence and Peace Economics* 19(4): 303–315.
Hartley K and Martin S (1993) The political economy of international collaboration. In: Coopey R, et al. (eds) *Defence Science and Technology: Adjusting to Change*. Chur: Harwood Academic Publishers, pp. 171–205.
Hayward K (1997) *Towards a European Weapons Procurement Process*. Paris: WEU ISS.
Hébert JP (2004) D'une production commune à une production unique? La coopération européenne en matière de production d'armement comme moyen de renforcement de l'autonomie stratégique européenne. In: Hébert JP and Hamiot J (eds) *Histoire de la coopérationdans l'armement*. Paris: CNRS, pp. 201–217.

Heseltine M (1986) European defence procurement. *The World Today* 42(7): 115–117.
Huston J (1984) *One for All: NATO Strategy and Logistics through the Formative Period (1949-1969)*. Newark, DE: Delaware University Press.
Ismay H (n.d.) *NATO: The First Five Years*, 1949–1954. Utrecht: Bosch-Utrecht.
Jackson R (2005) *Cold War Combat Prototypes*. Ramsbury: Crowood Press.
Jones LR, Candreva P and DeVore M (2012) *Financing National Defense: Policy and Processes*. Charlotte, NC: Information Age Press.
Jones S (2007) *The Rise of European Security Cooperation*. Cambridge: Cambridge University Press.
Keohane R (1984) *After Hegemony: Cooperation and Discord in the World Economy*. Princeton, NJ: Princeton University Press.
Kirby S (1979) The independent European Programme Group: the failure of low-profile high-politics. *Journal of Common Market Studies* 18(2): 175–196.
Klein B, Meckling BH and Mesthene EG (1958) *Military Research and Development Policies*. Santa Monica, CA: RAND.
Koremenos B, Lipson C and Snidal D (2001) The rational design of international institutions. *International Organization* 55(4): 761–799.
Krotz U (2011) *Flying Tiger: International Relations Theory and the Politics of Advanced Weapons*. Oxford: Oxford University Press.
Laffort JJ and Tirole J (1993) *A Theory of Incentives in Procurement and Regulation*. Cambridge, MA: MIT Press.
Lake J and Crutch M (2000) *Tornado Multi-Role Combat Aircraft*. Hinckley: Midland Publishing.
Lewis G (2002) RB199-Engine for the Tornado. In: Jefford CG (ed.) *Birth of the Tornado*. Oxford: RAF Historical Society, pp. 50–55.
Lopes M (1988) Portugal's Ginas. *Air Enthusiast* 36: 61–72.
McAfee RP and McMillan J (1986) Bidding for contracts: a principal-agent analysis. *Rand Journal of Economics* 17(3): 326–338.
Masseret JP and Gautier J (2009) *Rapport d'information 205: L'Airbus militaire A400m sur le 'chemin critique' de l'Europe de la défense*. Paris: Sénat français.
Masson A (2004) Le Cadre Institutionel de la coopération en matière d'armement en Europe. In: Hébert JP and Hamiot J (eds) *Histoire de la coopérationdans l'armement*. Paris: CNRS, pp. 181–200.
Matthews R (1992) *European Armaments Collaboration: Policy, Problems and Prospects*. Abington: Routledge.
Maulny JP (2002) L'industrie d'armement, acteur et bénéficiaire de l'Europe de la défense? *Revue internationale et stratégique* 48(4): 139–146.
Mawdsley J (2002) *The Gap between Rhetoric and Reality: Weapons Acquisition and ESDP*. Bonn: BICC.
Mawdsley J (2003) Arms, agencies, and accountability: the case of OCCAR. *European Security* 12(3): 95–111.
Mawdsley J (2010) Is successful armaments collaboration possible? The A400M project and the European Defence Agency. Paper presented at the 2010 UACES annual conference.
Moravcsik A (1993) Armaments among allies: European weapons collaboration, 1975-1985. In: Evans PB, et al (eds) *Double-Edged Diplomacy: International Bargaining and Domestic Politics*. Berkeley, CA: University of California, pp. 128–167.
Morrison M and Kingsley-Jones M (2010) A400M nations: stick or twist? *Flight International* 177: 13.
Morrocco J (2001) Europe inches toward A400M launch. *Aviation Week & Space Technology* 154(25): 154–156.

Mörth U (2003) *Organizing European Cooperation: The Case of Armaments*. Lanham, MD: Rowman & Littlefield Publishers.

Mörth U and Britz M (2004) European integration as organizing: the case of armaments. *Journal of Common Market Studies* 42(5): 957–973.

NAO (1991) *Initiatives in Defence Procurement*. London: HMSO.

NAO (1995) *Eurofighter 2000*. London: HMSO.

NAO (2001) *Maximizing the Benefits of Defence Equipment Co-Operation*. London: HMSO.

Norriss P (1999) Eurofighter: the new challenge of collaboration in military aerospace. In: Lawrence P and Braddon D (eds) *Strategic Issues in European Aerospace*. Aldershot: Ashgate, pp. 165–176.

North D (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Official Journal of the European Union (2006) Decision No 1982/2006/EC Of The European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007–2013). Brussels: European Union.

Peck M and Scherer F (1962) *The Weapons Acquisition Process: An Economic Analysis*. Cambridge, MA: Harvard Graduate School of Business.

Putnam R (1988) Diplomacy and domestic politics: the logic of two-level games. *International Organization* 42(2): 427–460.

Rogerson W (1995) Incentive models of the defense procurement process. In: Sandler T and Hartley K (eds) *Handbook of Defense Economics*, vol. 1. Amsterdam: Elsevier, pp. 311–317.

Rundquist B and Carsey T (2002) *Congress and Defense Spending: The Distributive Politics of Military Procurement*. Norman, OK: University of Oklahoma.

Sandler T and Hartley K (1995) *The Economics of Defense*. Cambridge: Cambridge University Press.

Sapolsky H, Gholz E and Talmadge C (2009) *US Defense Politics: The Origins of Security Policy*. New York: Routledge.

Scherer F (1964) *The Weapons Acquisition Process: Economic Incentives*. Cambridge, MA: Harvard Graduate School of Business.

Schlotter P (1979) Armaments cooperation in Western Europe. *Security Dialogue* 10(1): 47–56.

Schmitt B (2009) Adoption of new directive brings defence and security procurement into the single market. *Single Market News* 53(1): 6–7.

Sorenson D (2009) *The Process and Politics of Defense Acquisition*. Westport, CT: Praeger Publishers.

Sparaco P (2010) A400M's Fragile Roots. *Aviation Week & Space Technology* 172(9): 54.

Taylor T (1990) Defence industries in international relations. *Review of International Studies* 16(1): 59–73.

Thelen K (2009) Institutional change in advanced political economies. *British Journal of Industrial Relations* 47(3): 471–498.

Thornber A (2002) The Munich scene. In: Jefford CG (ed.) *Birth of the Tornado*. Oxford: RAF Historical Society, pp. 65–83.

Vandevanter E (1964) *Coordinated Weapons Production in NATO: A Study of Alliance Processes*. Santa Monica, CA: RAND.

Van Diemen de Jel W (2005) *EDA and Armaments Cooperation; Establishing Efficiency?* The Hague: CCSS.

Walker WB (1974) The multi-role combat aircraft (MRCA) a case study in European collaboration. *Research Policy* 2: 280–305.

Wall R (2010) Pain management. *Aviation Week & Space Technology* 172(3): 20–23.

Willox G (2002) Tornado/MRCA – establishing collaborative partnerships and airframe technology. In: Jefford CG (ed.) *Birth of the Tornado*. Oxford: RAF Historical Society, pp. 31–49.
Wilson JQ (1989) *Bureaucracy*. New York: Basic Books.
Witney N (2008) *Re-Energising Europe's Security and Defence Policy*. London: European Council on Foreign Relations.

Author biography

Marc R DeVore is a Lecturer in International Relations at the University of St. Andrews. From 2011 to 2013 he was a Jean Monnet Fellow at the European University Institute, Florence, prior to which he completed his PhD at the Massachusetts Institute of Technology (MIT). His research has been sponsored by Harvard's Center for European Studies, Columbia's Center for European Studies, and the French government. He has also been a recipient of Fulbright and Truman scholarships.