

Andrea Gilli, PhD
Post-doctoral Fellow - Center for Security Studies
Metropolitan University Prague

PH.D. DISSERTATION EXECUTIVE SUMMARY

Unipolarity, Technological Change and Arms Manufacturing: Industrial Alliances in the European Defense Industry

Abstract. Why do countries cooperate for the production of some weapon systems and not some others? Existing IR theories cannot fully answer these questions. In my thesis, I focus on Europe – the area in the world where armaments cooperation has been pursued more extensively. Drawing from the existing literature in international relations theory, in management studies and in industrial organization, I make two claims. First, the stability of the post-Cold War era has generally given European countries – although to different extents – an incentive to gear their defence policies towards the protection of domestic jobs and the promotion of military export rather than towards capabilities development. Second, in order to achieve these goals, EU countries have strategically cooperated on the production of some specific weapon systems rather than others: by altering the structure of the market, and thus creating winners and losers, technological change can explain this variation. In my dissertation I show that European countries were more likely to pursue cooperation in armaments production when either an exogenous and relatively major technological change made their defence industries less competitive in export markets (architectural change); or when extremely advanced components were necessary to compete in global armament markets (modular innovations). Conversely, European countries were less likely to cooperate when either an industry was characterized by linear improvements (evolutionary change) – and thus cooperation could only harm domestic industry and employment – or when a revolutionary innovation emerged (radical change). In this latter instance, each country had a strategic incentive to pursue its own program so to create a domestic industrial base and, eventually, establish the industry's dominant design, thus becoming market leader.

I test my theory on three case studies. Building on industry statistics, specialized publications and structured and unstructured interviews with over 100 senior officials and executive from the biggest European countries' armed forces, defence procurement agencies and defence companies, I have first looked at the Anglo-French cooperation on surface warships. Coherently with my framework, cooperation was difficult on warships' hulls (where technology changed more linearly) and was easier on naval weapon systems (where an architectural transformation had occurred). Second, I have looked at the production of air-power capabilities. As my framework expects, EU countries brought to production their Cold War-era 4th generation combat aircrafts (where a previous disruptive change created a technological gap with the US) in order to preserve domestic employment and export shares. Conversely, in the case of air-launched missiles, where a modular change took place, cooperation was wider where export pressures were stronger (air-to-air segment) and vice-versa (air-to-ground missiles). Finally, in the chapter concerning UAVs, a radical innovation, I show that cooperation was slow and limited as, coherently with my framework, each European country tried to develop its own know-how and eventually become market leader.

Theoretical significance. According to the existing literature in political science, multinational armaments cooperation (in Europe) is primarily a product of geopolitical pressures, European institutions, or countries' domestic identities and politics. While rich and insightful, this scholarship cannot however explain why countries cooperate on some weapon programmes and not on others and, moreover, why with some specific partners. Paradoxically, then, the existing theories aim to explain a general trend (armaments cooperation in Europe) but are then unable to account for some of its most important developments. For instance, why Italy cooperates on surface warships with France and on underwater warships (submarines) with Germany and why does France cooperate with Germany on helicopters and with the UK on air-launched missiles? Similarly, if not more

important, the existing scholarship cannot explain why cooperative programmes are more common in some fields (like aerospace and munitions) than in others (naval shipbuilding and land armaments). My theoretical framework addresses this puzzle by combining, in an innovative way, the literature in International Relations theory with the scholarship in Management Science to provide a parsimonious theoretical explanation. Beside the theoretical significance of this contribution, I believe its practical implications also deserve attention: by arguing that countries strategically pursue armaments cooperation to serve their goals, my work provides an analytical framework to explain when and why armaments cooperation is a positive development to welcome and promote and when it is likely to raise significant technological difficulties or political opposition.

Innovation and creativity. The key contribution of my thesis lies in its innovative theoretical framework that, drawing from both IR theory and conceptual developments in the field of Management Science, answers my research question. Two aspects deserve special attention. First, I bring back the concept of technological change to the study of politics – surprisingly neglected not only in political science but also for the study of countries' technological and industrial policies, armaments cooperation included. Second, the existing literature in political science is fundamentally split between those favoring structural explanations (i.e., international dynamics as drivers of governments' choices) and those preferring domestic accounts (i.e., domestic politics, identity and institution informing governments' behaviour). With my work, I go beyond this dichotomy through my focus on technological change: this permits me to show that technological innovations, by affecting both domestic constituencies (defence companies' employees) and by shaping global armaments markets, can account for governments' strategies when it comes to military procurement.

Thoroughness and objectivity of findings. My work is based on three case studies: Anglo-French cooperation on surface warships, EU cooperation on air-power capabilities and EU cooperation on unmanned aerial vehicles – all after the end of the Cold War. In contrast to most works on military procurement or concerning European cooperation in armaments production, my case studies analyze entire markets – rather than individual weapon programs – over an extended period of time. This ensures against potential methodological problems in my research design that could undermine the solidity of my results. In particular, by focusing on markets, I address the risk that my results are driven by my case selection (sample selection bias), while by investigating their evolution over an extended period of time, I reassure against the risk of temporal truncation (i.e., that the results are driven by length of the period selected). Additionally, I have focused on different types of armaments market in order to ensure variation both in my dependent and independent variables so to make my results methodologically more solid and, from a policy-perspective, more generalizable. Through a plurality of sources, including primary documents, specialized magazines and interviews with the key individuals involved in the policy-making processes, I have tried to establish whether my hypothesized causal mechanism is empirically observable and lead, in the different instances under observation, to my expected outcome.

Relevance to European security and defence policy. While my dissertation provides, primarily, a theoretical contribution, it has also important policy implications for the ESDP. I believe four are of particular relevance. First, in my theoretical chapter, I suggest that without strong external pressures (like the rise of military threats), the chances of truly improving and enhancing cooperation on armaments production in Europe are relatively remote. Second, my theoretical framework highlights the strategic calculations behind the choice to cooperate on armaments production: this warns skepticism about the possibility of making it a more frequent procurement option among countries. Third, according to my thesis, by focusing on technological change,

and its different types in particular, it is possible to speculate about the chances of success of various multinational programs. Finally, my work can account for two pressing problems affecting the European defence industrial base: overcapacity and multinational programs' general poor performance. On the one hand, my thesis suggests that, since countries want to protect their own national industries, they prefer to pursue domestic solutions – and thus to avoid cooperation – when they possess the industrial and technological skills. Overcapacity results and important opportunities of cooperation are missed: when technology evolves linearly, the management of multinational programs is in fact inherently easier. On the other hand, my framework suggests that the difficulties generally plaguing multinational programs are a product of self-selection: simply put, since countries tend to cooperate with partners when they lag behind technologically, such problems are an inevitable consequence of this strategic procurement choice.