

Defence and security industry: Which security industry are you speaking about?

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Summary

This article deals with the issue of defining the security industry, using a reflexive and constructivist approach, in order to build the foundations of a theoretical framework to analyse the diversification of the arms industry in the security realm. It argues that existing definitions offered by the current literature on the security industry reify situated and narrow understandings of security. In contrast, this paper considers security as an open-ended and polysemous concept, and suggests therefore that one should write about security industries rather than security industry, the latter being hard to conceptualized as whole. Indeed, like a nebula, it covers a vague and complex ensemble, with many different actors, and a wide array of technologies and security objectives, in which the defence industry could be a component. From that standpoint, this article proposes to break down various possible understandings of the "security industry" concept according to different referential of categorisation. This process enables theoretical identification of specific forms of security industries and more importantly, it offers to reveal the particularities of the defence industry as a security solution provider evolving through a diversification process.

Sommaire

Cet article traite de la définition du concept "d'industrie de sécurité". Il part d'une approche constructiviste et réflexive pour élaborer un cadre d'analyse permettant d'appréhender le processus actuel de diversification de l'industrie de défense dans le domaine de la sécurité d'une manière différente de celles traditionnellement mises de l'avant. Partant du constat que les définitions offertes par la littérature récente portant sur l'industrie de la sécurité réifient des compréhensions étroites et contingentes du sujet, l'article propose de considérer la sécurité comme un terme ouvert et polysémique. Ainsi, compte tenu des difficultés inhérentes à la conceptualisation de l'industrie de sécurité comme un ensemble cohérent, l'article soutient qu'il est plus approprié de parler «d'industries de sécurité». Comme une nébuleuse, ces dernières couvrent en effet une grande diversité d'éléments, comprenant de nombreux acteurs, des objectifs variés et des outils disparates. En théorie, l'industrie de défense pourrait incarner une des composantes de ce vaste ensemble aux contours indéfinis. Dans cette perspective, cet article propose de décomposer les diverses interprétations du concept selon différents référentiels de catégorisation. Cet exercice permet l'identification théorique de formes plus précises des industries de sécurité et jette un éclairage différent sur les caractéristiques de diversification de l'industrie de défense en "fournisseur de solutions de sécurité".

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Considering the wide range and diverse kinds of tools they develop, writing about arms producing companies can, to a certain extent, seem a bit obsolete. In that regard these firms often don't recognize themselves under such a denomination, and prefer to employ the more neutral title "defence firms". Nowadays many label themselves as providers of defence and security solutions. The "security" concept was, in many occurrences, added recently, e.g. the Swedish Defence Industry Association, introduced the term in 2007. Some may consider this change of label as a reflection of a strategic interest or move for the "security market", which, is said to be growing significantly since the 9/11. The current trend of mergers and acquisitions in the defence market tends to support this hypothesis. In fact, major defence firms such as EADS, SAFRAN, Boeing, BAE Systems acquired over the last few years companies providing cyber security, biometric, or antiterrorist solutions. In a generic fashion, one can file these acquisitions as being in the "security industrial sector" to underline the idea that they occurred beyond the traditional borders of the defence industrial field. However, this intellectual shortcut raises several issues, especially in light of the controversial question that is the definition of the "security industrial sector". It supposes that, like the defence sector, there is a common denominator between the different so-called security solutions suppliers that allows one to define and delimit on a conceptual level, the "security industrial sector". Such an assumption, can however be challenged.

The interest for the security industrial sector is relatively recent. There are very few scientific studies dedicated to it, as there is no clear and satisfying definition of this sector. The few available work regularly underlines how hard it is to identify with a certain degree of unity what characterizes the security industry compared to its defence counterpart. Indeed, even if the defence sector is not officially recognized or certified as a statistical category, its monopsonic character, the state being the sole customer, and the military use dimension are usually considered adequate discriminating

characteristics to mark it out as a singular ensemble. In the case of the security industry such an exclusion-based logic does not seem applicable. Contrary to the defence industry, the customers and users of security have very different profiles. Customers of security products and services can be public (security professional –military and the police, but also public actors willing to secure assets, location or personals), as well private, individual, companies, airports. The product or services can be used, be it by public or private agents (e.g. private security companies), for public security matters (securing the border), or private security matters (house, company headquarters). It is thus hard to use these characteristics to point out the specificity of this sector.

What is therefore at stake in this article is the question of whether it is possible to draft a generic definition of the security industrial sector, based on sufficiently strong conceptual grounds to be used as a workable, relevant and useful category for scientific approach. Let's underline here, that contrary private consultancy groups who carried most of research report on this sector, our objective is not to draft a definition that would serve as a base for financial estimations of the market. Therefore, this paper might not be very useful to investors looking for increasing the financial value of their portfolios in the security sector.

Our main goal is to understand, at a conceptual level, the relationship between the arms producing sector and the security sector. This effort is part of a PhD thesis, which analyses how the perception of change of global security environment and the European states' redefinition of priorities between external and internal security issues affect and are reflected by changes in the defence industrial sector.

The expected output of this paper is therefore a framework that enables to better understand the diversification of the defence industry within the security realm. There is indeed a need for new conceptual tools to address the changes that are taking place in the arms industry. It is beyond dispute that the latter is moving away from its cold war profile, and the

diversification toward security solutions¹ can be presented as one of the most significant trend in the recent evolution of the arms industry.

In terms of theoretical approach, while attempts to define the security industry are usually conducted by economic scholars, we propose here to look at the IR literature on the security concept. Before defining the security industry, we have indeed to clarify what security and whose security this industry is about. Constructivist scholars made a disruptive contribution to the field of IR on that matter. Constructivism, especially critical constructivism, offers to reveal the contextual dynamics that are at stake in the process of definition². As Macleod puts it, critical constructivist scholars “don’t want to lock themselves in a ‘good definition’ of security”, rather they lay emphasis on the “conditions of definition of security”³. Their approach, in that light, deeply questioned the dominant understanding of the concept and stimulated an important debate among scholars and practitioners. Their framework of analysis, in particular the securitisation theory, enables us to look at how the defence industry itself is defining its approach to security and in fine to the security industry, and maybe shaping the sector at the same time.

In that light, this article uses a reflexive framework to analyse the definition of the security industry: instead of declaring what security

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1. Cyber-security, border security, homeland security, for instance.
 2. The critical constructivist theory can be presented with the three principles formulated by WELDES and *al* : (1) “What we understand as reality is socially constructed. (2) Constructions of reality reflect, declare and reify power relations. Then, some agents or groups play a privileged role in the production and reproduction of these realities. (3) A critical constructivist approach denaturalizes the dominant constructions, it gives indications for the transformation of the common sense, and it facilitates the imagination of alternatives way of living. It problematizes also the conditions of what it affirms, in other words, a critical constructivism, is also reflexive”. WELDES J., LAFFEY M., GUSTERSON H., and DUVALL R., “Introduction: Constructing Insecurity”, in J., LAFFEY M., GUSTERSON H., and DUVALL, R (Eds.), *Cultures of insecurity: States, Communities, and the Production of Dangers*, Minneapolis, University of Minnesota Press, p.13.
 3. MACLEOD, Alex, ” Les études de sécurité: du constructivisme dominant au constructivisme critique”, *Culture & Conflits*, n° 54, été 2004, p. 14.

should be about, it stresses how security is understood and defined by social agents. It argues that the definition put forward in the existing literature on the security industry reifies⁴ a very situated and narrow understanding of security. In contrast, it considers security as an open-ended and polysemous⁵ concept, an object of politically charged discussions. Consequently, this article suggests that one should write about security industries rather than security industry. Our hypothesis is that security industry can hardly be defined or conceptualized as whole. Like a nebula, it is too much of complex and vague ensemble, with many different customers, too many different applications, be it in terms of technology and security objectives. The defence industry can theoretically be included in this big ensemble. From that standpoint, this article proposes to break down the various possible understandings of the security industry according to different referential of categorisation. The latter enable to identify theoretically some specific forms of security industries. But more importantly, they offer to reveal the particularities of the defence industry as a security solution provider evolving through a diversification process.

The first part of this paper addresses the task of defining of the security industry from a discussion on the concept “security” itself. Based on this conceptual ground work, the section 2 investigates the possible categorisations for the analysis of the security industrial field.

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4. The process of reification sometimes refers as objectification or thingification “reification refers to the process of representation and experience in which human-made object or situation becomes seen as factual given that exists externally and independently from the agencies that produced it.” See HUYSMAN, Jef, “Agency and the politics of protection”, in HUYSMAN, Jef, DOBSON, Andrew, PROKHOVNIK, Raia (Eds.), *The Politics of Protection: Sites of Insecurity and Political Agency*, Routledge, 2006.
 5. A polysemous word is a word that has many possible meanings.

■ DEFINING THE SECURITY INDUSTRY, AN APORIA

Defining the security industry must start with defining the concept of security itself. The ontological dimension of what could be considered a familiar and obvious concept has been widely discussed in political science and especially in International Relations (IR) theory. There is no room here for an extensive review of the literature on the definition of security in IR, therefore we choose to focus primarily on the significant contributions from the Copenhagen School of thought, because of its essential contribution to the debate about the concept. This insight will serve, in the second sub-section, as a base for a critical discussion of the literature on the security industry.

Security, a malleable and controversial concept

In the daily language, security is the state of being or feeling secure. It implies an absence of threat or a lack of vulnerability⁶. Very broad and open-ended, this concept can be applied to a large range of actors or referents⁷. Security is thus ubiquitous in the social sphere, potentially having some relevance to all dimensions of everyday life. As Frédéric Gros puts it, security is about the protection of human beings in their “quality of living” (qualité de vivants)⁸.

The concept of security occupies a central importance in political science as providing security has been theorized since the French Revolution and the work of Hobbes, Smith and Rousseau, as embodying the very first

6. Concise Oxford English Dictionary, Eleventh Edition, Oxford, Clarendon Press, p. 1301.

7. By actor, we understand here the agent that provides security or takes the responsibility to manage the securing process such as the state, private security companies, or the police. By referent, we understand the beneficiary of security or the target of the securitisation process, e.g. the sovereignty, the territory, health, life...

8. GROS, Frédéric, États de violence. Essai sur la fin de la guerre, Paris, Gallimard, p. 233.

responsibility of the modern state, its *raison d'être*⁹. Through the 'social contract', the state has gained the monopoly of security actions. But defining security as an area of state's responsibility and intervention is vague. It can cover sectors such as social security, military security, economic security, environmental security, etc. Following the analytical framework of the Copenhagen School, there are four questions that should be raised to discuss the concept of security: "What is the nature of insecurity? What is the referent object of security? Who is in charge of assuring security? What are the means to ensure security?"¹⁰.

Applying these four questions reveals that the definition security is the object of multiple interpretations. Even when focusing on the concept of national security, from a scholar or practitioner to another, the answers to these questions vary to a great extent. Therefore, reading it through this analytical lens, the security concept presents itself as "essentially contested".

For Ayse Ceyhan the source of this contestation lies in the fact that security has been studied more as an empirical object than as a concept¹¹. In most cases, the definitions are descriptions of what security policies are or should be about, rather than ontological reflections¹². For Rasmussen, the liveliness of the contestation over the definition of the concept primarily reflects and is driven by the reflexive dimension of the debate over the (re)definition of Western States' security agendas after the cold war¹³. The absence of clear threat led to an intense confrontation between competing views on what risks and dangers security policies should address in the

9 For a political history of the concept see : BALZACQ, Thierry, « Qu'est-ce que la sécurité nationale ? », *La revue internationale et stratégique*, n°52, hiver 2003-2004, pp-36-37.

10. BUZAN, Barry, WAEVER, Ole and DE WILDE, Jaap , *Security a New Framework for Analysis*, Lynne Rienner Publishers, 1998.

11. CEYHAN, Ayse, «Analyser la sécurité: Dillon, Waever, Williams et les autres », *Cultures et Conflits*, n°31-32, 1998.

12. Ibid, see also BALDWIN, David A., "The Concept of Security", *Review of International Studies*, n°23, 1997, p.5.

13. RASMUSSEN, Mikkel Vedby, "It sounds like a riddle: Security Studies, the War on Terror and Risk", *Millenium*, 2004, Vol. 33, n°2, pp. 381-395.

wake the 21st century. Applying the work of the German sociologist Ulrich Beck on reflexive modernisation to IR, Rasmussen, considers that security policies have become the subject of constant, uninterrupted reflection¹⁴. But what matters in the debate between scholars, and also between practitioners, is the anticipation, risks and threats scenarios constructions, and the actions planned to cope with these risks or threats¹⁵. He speaks in that light of “reflexive security” to conceptualise the fact that current security discourses and security practices are now essentially reflexive, constructed, oriented toward the future: i.e. not so much about what happens but on what may happen¹⁶.

“The question is no longer whether one provokes conflict by seeking security, but rather what conflicts, or security issues in general, are important to one’s security. In the absence of a clear and present danger, most issues are the cause of endless discussion and not of vital and pressing importance. The dilemma then becomes when and how to act”¹⁷.

In that light it appears essential to make the genealogy of how the concept of security has been understood, discussed and used in relation to the redefinition of security policies in academic discussions after the cold war. Such an exercise will reveal to which extent security can be a malleable and controversial concept, and consequently to which extent defining the security industry can be a slippery exercise. It will also serve as a precaution against misunderstandings or theoretical criticisms regarding the use of the word “security” in relation to the security industry.

14. RASMUSSEN, Mikkel Vedby, “A Parallel Globalization of Terror : 9-11, Security and Globalization”, *Cooperation and Conflict*, 2002, 37, pp. 328-329.

15. BECK, Ulrich 1999, p. 133, cited in RASMUSSEN, Mikkel Vedby, “A Parallel Globalization of Terror : 9-11, Security and Globalization”, op. cit. p. 329.

16. RASMUSSEN, Mikkel Vedby, *Risk Society at War*, Cambridge, Cambridge University Press, 2006, p. 4. See also RASMUSSEN, Mikkel Vedby, “A Parallel Globalization of Terror : 9-11, Security and Globalization”, Op. cit, pp. 328-329 ; See also RASMUSSEN, Mikkel Vedby: “ ‘It sounds like a riddle’ Security Studies, the War on Terror and Risk”, op.cit.

17. RASMUSSEN, Mikkel Vedby, “A Parallel Globalization of Terror : 9-11, Security and Globalization”, op.cit. p. 328.

As David Baldwin puts it, in IR “redefining ‘security’, has recently¹⁸ become something of a cottage industry”¹⁹. Tracing back the source of this phenomenon, we can point that researchers dealing with the concept often feel obligated to take part in a debate that has primarily been structured around the proposition submitted by the Copenhagen School to open the understanding of security to other threats than the military and other referent than the state²⁰. The Copenhagen School is not per se an constructivist school of thought, it is ‘unclassifiable’ as its main figures claim different and sometimes multiple affiliations: Buzan, for instance, call himself a neo structural realist, while Waever considers himself a post-structuralist realist or a pessimist constructivist²¹. Nevertheless, these scholars work on security has largely stimulated reflexive and constructivist inputs on the redefinition of the concept of security and security policies.

Until in the end of the cold war, the understanding of concept of security was inherited from the dominant paradigm of the realist school of thought. It considers security as a matter of “war and peace, the protection of the territorial integrity and political independence of the nation state from threat of the use of violent force”²². The State is the core referent and actor of security, in line with generally accepted interpretations of Hobbes and Smith’s work; the security of individuals is subsumed in the security of the state, the latter being in charge of protecting society from violence and invasion from other societies²³. The enmity of a foreign power and its potential ambition to break the territorial sovereignty through military

18. "Recently" refers to years following the end of the cold war.

19. BALDWIN, David A. “The concept of Security”, op.cit. p. 5.

20. The opposition between scholars and practitioners is often reduced to the opposition between ‘traditionalists’ and ‘wideners’, the first focusing on "hard" security issues (military issues), the latter on "soft" security issues (identity, human security...).

21. MACLEOD, Alex, « Les études de sécurité: du constructivisme dominant au constructivisme critique », Op.cit., p. 13.

22. COTTEW, Andrew, *Security in the New Europe*, New-York, Palgrave Macmillan, 2007, p. 6.

23. SMITH, Adam, *An Inquiry Into The Nature and Causes of Wealth*, Oxford, Clarendon Press, 1976, p. 689, cited in BALZACQ, Thierry, « Qu’est-ce que la sécurité nationale? », op.cit. p. 37.

action being perceived as the most significant threat to the survival of the state, being serious about security meant discussing issues related to defence²⁴.

The end of the cold war opened a window of opportunity for the so-called “wideners”, i.e. scholars and practitioners advocating 1) for an enlargement of the concept to include threats and vulnerabilities such as climate change or AIDS, that had been shadowed by the security paradigm of the Cold War; and 2) for a deepening of the concept beyond a state-centric approach. For instance, Barry Buzan, a leading figure of the Copenhagen School of thought suggested breaking the automatic link between security, state, and defence²⁵. He argued in favour of an approach that would ‘widen’ the understanding of security to incorporate other sectors than the military one (e.g. environment, societal, economic). Following in his steps, other scholars proposed to ‘deepen’ the definition of security to take into account other referents than the state, offering thus different level of analysis: global, regional or human (individual) security²⁶.

In the background of this widening/deepening debate, the issue of the objectivity and factuality of threats to security was also raised as a line of distinction between the more positivists and rationalist scholars, for whom threats are objectively and externality given, and on the other deconstructivist and critical constructivist scholars, for whom insecurities “are an outcome of a political process that transforms phenomena from non-security question to security questions”²⁷. For the positivists, what

24. BIGO, Didier, “When two become one: internal and external securitisations in Europe”, in KELSTRUP, Morten, WILLIAMS, Michael C. (Eds.), *International Relations Theory and the Politics of European Integration, Power, Security and Community*, London, Routledge, 2000.

25. BUZAN Barry, *People, State and Fear: An Agenda for International Security Studies in the Post-Cold War Era*, London, Longman, 1991.

26. On the widening and deepening of security, see KRAUSE, Keith and WILLIAMS, Michael C. (Eds.), *Critical Security Studies*, London, University of Minnesota Press, 1997.

27. HUYSMANS, Jef, “Agency and the politics of protection”, op.cit., p. 3.

matters with widening the understanding of security, is the question of the seriousness of and the hierarchies between threats, i.e. if they are misperceived in terms of plausibility and immediacy or if they are given the right political priority, be it on moral, ethical or political, strategic grounds. The issue of whether the terrorist threat or threat of illegal immigration are overblown or not is in that light a vexed question between scholars and practitioners. The post-positivist approach considers on the contrary that threats are not pre-given dangers but “outcomes of a politics of representation”²⁸, in other words, that insecurities are reifications, social constructions. What is thus important for them, it to unpack the processing of threat reification.

Ole Waever, the other leading figure of the Copenhagen School chose for his part to address the question of defining security. Using contributions from linguistics and philosophy, he suggested the “de-essentialization” the concept of security²⁹ to treat it as a self-referencing notion³⁰: i.e. “security is not the opposite of insecurity”³¹. Security is the product, or outcome, of the security discourse itself. There are no objective threats; the latter exist only through a discursive process that identifies them as such, process that Waever labels “securitization”. The securitization process is based on five steps: the designation of a referent object to secure; the subjective definition of an existential threat, the fulfilment of the process by one or several agents having the authority to carry it; the implementation of exceptional measures; and finally the acceptance of process by a community or part of the community. The securitization process actualizes uncertainty and, in that sense, precedes the phase of securing; it points

28. Ibid, p. 4.

29. WAEVER, Ole, “Securitization and Desecuritization”, in LIPSHULTZ, Ronnie D. (Ed.), *On Security*, New York, Colombia University Press, 1995, p. 46-85.

30. WAEVER, Ole, *Concepts of Security*, Institute of Political Sciences, University of Copenhagen, 1997.

31. CEYHAN, Ayse, « Analyser la sécurité: Dillon, Waever, Williams et les autres », *Cultures et Conflits*, n°31-32, 1998, p. 3.

out and credits threats in the opinion and calls for mobilizations of means to deal with them³².

In Waever's logic, one should reject essentialist definitions of security, the concept of security should not be associated by definition to a specific form or threat or referent. Rather, one should engage in a sociological inquiry to unpack the reification process that designated threats to, or referents of, security in a given context. Threats and referents of security should not be taken for granted but understood as contingent socio-political constructions, and contextualized as part of situated practices of security. It means that, by saying that security is about preventing military invasion, terrorism, or risks to human lives, one is not defining "security" but presenting a situated practical understanding of security.

Despite their different implications, Buzan's widening and Waever's de-essentializing contributions to the definition of security, show both the extent of security's malleability as a concept. Its understandings in the field of IR is highly fragmented as it has been deeply associated to the debate on actual security policies, how they are, how they evolved or should evolve for objectivist scholars, or as they are politically and sociologically constructed for more post-positivist scholars. In the following sub-section, we propose to follow a definition of the concept of security that does not refer to any specific security policy (i.e. that does not take side in the widening debate).

Define security to define the security industry

This paper argues that to conceptualize the "security industry", one should start by defining the concept of security. Building on Buzan and Waever's contributions to the redefinition of security, two possible ways, or postures, to adopt to define the term can be put forward. The first,

32. BALZACQ, Thierry, « Qu'est-ce que la sécurité nationale? », op.cit. pp. 39-40.

following Buzan would be to position one's understanding of security within the widening and deepening debate, approaching it in terms of a sector on the basis of specific threats, referent objects, and means to secure. For example, one could defend the idea that security has primarily to do with state's sovereignty and symmetric military threats from other states. Critical constructivists, such as Jef Huysmans would here advocate that this sector approach reifies and objectifies threats by cutting them loose from the political dynamics within which insecurities and protection are struggled over³³. Taking into account the latter criticism, the second option - which is the one favoured in the study - consists in remaining very generic and refusing to link it - by definition - to a specific kind of security policy or security practice in order to avoid reification and encapsulating one's understanding of security in politically or culturally specific view of the term. It is assumed that specifics should come at a later stage and be anchored empirically. To quote Felix E Oppenheim's methodology on conceptual analysis, "concepts should not preclude empirical investigation by making true 'by definition' what should be left open to empirical inquiry"³⁴. David Baldwin also emphasizes that concepts should not be considered substitutes for empirical propositions, theories, or analytical frameworks³⁵. Along those lines, it is considered here that normative assessments on the value of security should also be avoided in the definition³⁶, meaning that the definition should not suggest how important security is in relation to other values.

In that perspective, this paper proposes to join David Baldwin and Thierry Balzacq who both dug out an old definition of security put forward by

33. HUYSMANS, Jef, "Agency and the Politics of Protection", op.cit, p. 12.

34. OPPENHEIM, Felix E., "The Language of Political Inquiry: Problems of Clarification", in GREENSTEIN, Fred I. and POLSBY, Nelson W. (Eds.), *Handbook of Political Science, Vol I: Political Science: Scope and Theory, Reading 1975*, p 284. cited in BALDWIN, David A., "The Concept of Security", *Review of International Studies*, no 23, 1997, p. 7.

35. BALDWIN, David A. « The Concept of Security », op.cit p. 7.

36. Ibid, p. 18.

Arnold Wolfers in 1952³⁷. Wolfers's definition highlights a conceptual common denominator to all the different uses of the word security, be it in terms of sector or referent, and does not take position on the political importance of security. For Wolfers, security, in an objective sense, measures the absence of threats on acquired values and in a subjective sense, the absence of fear that such values will be attacked³⁸. Baldwin points out that, as the absence of threat is in certain cases impossible, the formula may be reformulated as "low probability of damage on acquired values". For Baldwin, one cannot reduce the probability of earthquake occurrence, but the probability of damages on acquired values can be limited with alarm systems and specific building standards. This rephrasing moves the emphasis from the threat in itself to the idea of acquired values³⁹, i.e. socially constructed values, be it the national sovereignty, private ownership, life or the environmental balance. For Thierry Balzacq, the expression "acquired valued" in Wolfers's definition is crucial as it allows a reference to the securitization theory. It insists on the idea that security is primarily what actors make of it: "it's is the interaction of the physical world and the other actors that objectifies a situation into a security issue"⁴⁰. The use of generic terms makes that, with this definition, environmental security, societal security, military security are not fundamentally different concepts, but different forms of security practices. In that light, Balzacq proposes to rework Wolfers as follow: "Regardless of the analytical unit (Individual, State, Region, Globe), security can be approached subjectively and/or objectively. From an objective point of view, security designates the absence of threats to constructed and reified

37. WOLFERS, Arnold, "National Security as an Ambiguous Symbol", *Political Science Quarterly*, Vol. 67, n 4, Dec., 1952.

38. *Ibid*, p. 485.

39. BALDWIN, David A., « The Concept of Security », *op.cit.* p. 13.

40. BALZACQ, Thierry, "Qu'est ce que la sécurité nationale?", *op.cit* p. 44.

values. From a subjective point of view, it is the minimisation of a danger affecting these values”⁴¹.

Making a critical appraisal of Baldwin and Balzacq’s reworking of Wolfers’ definition, we consider here that one should move away from the distinction between objective and subjective security made by Wolfers and reused by Balzacq; and reconsider the use of the notion of “probability of damage” in Baldwin’s definition. In both cases, it is implied that one can have a technical-scientific view of risk, making risk objectively computable – i.e. knowable and measurable. Such an assumption can be challenged, in particular in light of the sociological theories about risk, which generally reject risk as an objective empirical fact and see it as essentially constructed⁴²: As Francois Ewald puts it, there are no such things as risk in reality: “nothing is a risk in itself [...]. But on the other hand anything can be a risk; it all depends on how one analyses the danger, considers the events”⁴³. The possibility to do risk calculation, or risk probabilities with some kind of risk does not make risk an objective empirical event. The bottom line here, is that if risk is all about perception, “a category of understanding”⁴⁴, security is therefore also about perception and subjectivity. In this light, it could be also argued that Baldwin’s and Balzacq’s formulation do not give enough account to the importance of the agent in the social construction or reification of insecurities.

Therefore, security will be define for the purposes of this paper as the assurance for a given agent that the values he/she/it constructed and reified into acquired values won’t be jeopardized. Security is understood as

41. In French: « Quelle que soit l’unité d’analyse (individu, État, région, globe), la sécurité peut être abordée subjectivement et/ou objectivement. Du point de vue objectif, elle désigne l’absence de menace portant sur des valeurs socialement construites et réifiées. Du point de vue subjectif, elle est la minimisation d’un danger affectant ces valeurs », BALZACQ, Thierry, « Qu’est ce que la sécurité nationale? », op.cit p. 43.

42. HOLMQVIST, Caroline, “Risk society and security studies – a research program in the making?”, unpublished paper, cited with author’s permission (caroline.holmqvist@fhs.se).

43. EWALD, François, “Insurance and Risk”, in BURCHELL *et al* (Eds.), *The Foucault Effect: Studies in Governmentality*, London, Harvester Wheatsheaf, 1991.

44. *Ibid*

a very open-ended concept, which by definition cannot be related by certain forms of insecurity or threat. This being said, it is possible to narrow the scope of its use. This should be done on an empirical level by a sociological and political theoretical account of specific security practices, via a “situated agency approach⁴⁵”, i.e through the lens of a specific agent (be it a country, an international institution, an NGO, or, for the purpose of our study, an arms producer). This approach raises a wide range of questions: the actor and values concerned, the wanted degree of security, the kind of threats, the means for coping with such threats, the cost of doing so, and the time frame⁴⁶. All these aspects are not to be systematically specified each time one uses the concept of security, but put together they form a matrix that can be used to deconstruct practices security from one agent to another or from a sector to another. It is assumed here that there are not obvious externally given real threats to security and therefore, the securitization processes should be taken in account from the start and related empirically to a situated agent and its experience(s) of insecurity, making reference to a historical (e.g. post-9/11) and geographical (e.g. USA, Europe or France), political (e.g. a political party) or institutional context (e.g. public or private). To illustrate, one should not say: terrorism and organized crime are the most salient threats to the well-being of the population of the EU, but the EU has identified terrorism and organized crime as the most salient threat to the security of the population of its member states. It is only with such a reflexive approach that research dealing with security may avoid the pitfall of biased and ethnocentric approaches or involuntary moral and normative judgments on what security is or should be about.

45. We borrow the concept of ‘situated agency’, from Jef Huysmans who describes it as follows: “the concept of ‘situated agency’ refers first to the relational nature of power- that is, a capacity always exist in relation to other capacities. But also refers to something else. The capacity to act and the criteria for judging it are always tied in with the nature of the field in which the agents operate. See: HUYSMANS, Jef, “Agency and the politics of Protection”, op.cit. pp. 9-10.

46. BALDWIN, David, p.cit. p. 17.

In a nutshell, the definition retained above defines security in its widest sense in order not to objectify or give credit to any specific kind of insecurity. On the other hand by choosing to anchor empirically understandings of security via a situated agency approach, the paper seeks to highlight the essential reflexive dimension of the concept. This sociological turn, so-to-speak, gives account to the securitization processes and more importantly it enables to raise the question of how arms industry is defining its understanding of security.

In the next section, this rather open-ended, reflexive and constructivist approach of security leads us to frame a rather heterodox approach to the definition of the security industry. This will be done after and against a review of the literature on the security industry.

The issue of defining the security industry: a review of the literature

Looking at the state-of-the-art, and the existing literature, it appears that, so far, the security industry has almost exclusively been conceptualized and studied by consultancy companies such as Frost & Sullivan or the French En toute sécurité. The reports from the market research firms are not open source documents, and their methodologies and research scope are primarily targeted to meet expectations of investors, their main customer. These kinds of surveys have existed for a long time, way before the interest for security solutions grew exponentially in the aftermath of 9/11. In academic and scientific research, the security industry has remained below radar, contrary to the defence industry that has been widely studied⁴⁷.

47. See DUNNE, Paul, "The Defence Industrial Base", in HARTLEY, Keith, SANDLER, Todd (Eds.), *Handbook of Defense Economics*, vol. 1. Amsterdam, North Holland, 1995; HARTLEY, Keith, "The Arms Industry, Procurement and Industrial Policies", *Handbook of Defense Economics*, vol. 2, Amsterdam, North Holland, 2007; SKÖNS, Elisabeth,

A boom in demand for security solutions was expected following the 9/11 attacks on WTC and the Pentagon, igniting a wider institutional interest for the security industry. In 2004, the OECD published a report on the security economy highlighting the need for further research on the topic⁴⁸. The same year, following the introduction of the EU's common security strategy, the European Commission decided to launch a research program specifically dedicated to Security. €45 millions were to be spent within the Preparatory Action on Security Research for the period 2004-2006, and €1, 400 millions are currently invested in the 7th Framework Program for the period 2007-2013.

If this budget has so far mainly funded R&D projects submitted by industrial firms, some initiatives received grants to study the security industry itself. Most of them were about forecasting organisational and technological needs of the EU's industrial base with regards to security. However the project European Security Economics (EUSECON), led by the German Institute for Economic Research, DIW, proposed to pave the way to an academic field on security economics with a first-of-kind comprehensive survey of the European security industry. The task of defining the industry and developing a methodology was left to Carlo Marti Sempere, from Isdefe (Ingeniería de Sistemas para la Defensa de España) a Spanish para-public research and engineering institution. The two working papers he released on the EUSECON website and the article he published in the journal *Defense and Peace Economics*, are so far the most advanced and comprehensive open source studies one can find on the security industry⁴⁹. In other words, there is very little material to sustain an

DUNNE, Paul, "Economics of Arms Production", in KURZ, Lester (Ed.), *Encyclopedia of Violence, Peace and Conflict*, vol. 1., Oxford, Elsevier, 2009; HÉBERT, Jean Paul, *Production d'armement : mutation du système français*, Paris, La documentation Française, 1995.

48. OBORNE, Michael, (Ed.), *The Security Economy*, Paris, OECD, 154p.

49. SEMPERE, Carlos Marti, "The European Security Industry : A Research Agenda", *Defense and Peace Economics*, Vol.22, n 2 ; SEMPERE, Carlos Marti, *A Survey of the European Security Market*, EUSECON Working Paper series, n°43, February 2011.

extensive discussion of the definition of the security industry. Therefore, Carlos Marti Sempere's contributions will be thoroughly discussed.

As he pointed out, there is no commonly accepted definition of the security industrial sector. Rephrasing Tilman Brück's definition of security economics⁵⁰, he suggested the following:

“The security industry is understood as the industry that supplies the products and services specifically used by the human being to prepare, prevent, protect, respond, reduce, palliate and deal with the threats and consequences that undesired events have on our society. These consequences may be summarised in terms of damage to people's life, health, property or other assets, including information”⁵¹.

With this rather pragmatic definition he tried to encapsulate all the dimensions of the industry by presenting the industrial activities concerned, listing and describing the kind of capacities mobilized to secure, as well as the objects of protection. The referential of security was left partially open-ended. He clarified it later on: “it may be the citizen, a social group, or even society as a whole”⁵².

At the first glance, the emphasis seemed to be laid on “capacities”, as the author lists in details various security measures. He argued however that the most important part of the definition is “undesired events”. For Sempere, the use of the term ‘undesired’ reflects the subjective dimension of insecurity. However, as we will show, voluntarily stressing threats and undesired events as the core components of the definition is a vulnerable (questionable) choice as these are not variables that really help to identify

50. Brück's definition of security economics was the following: “Security economics is understood as those activities affected by, preventing, dealing with and mitigating insecurity including terrorism, in the economy”, BRÜCK, Tilman, *A survey of Economics of Security*, EUSECON DIW Berlin, Working Paper Series, n° 1, April 2008.

51. SEMPERE, Carlos Marti, *A Survey of the European Security Market*, EUSECON, DIW Berlin, Working Paper series, n°43, February 2011, p. 2.

52. *Ibid.*, p. 4.

the specificity of this industry, rather they tend to highlight its scattered dimension.

Acknowledging the wideness of the definition, Sempere narrowed the scope of his industry survey by focusing on the provision of security goods dealing with terrorism and organized crime. This focus raises more issues than it solves, in particular when it comes to assessing the functions of goods and services in the security apparatus. How to distinguish products and services dealing with organized crime than the ones dealing with ordinary crime? How to distinguish between goods to mitigate damages from a terrorist attack and a natural disaster? The author recognizes himself that the distinction cannot always be made. In fact, the question of how to distinguish security goods with those produced for defence purposes can also be raised. Many of them have a strong dual-use profile, both for internal security and external security matter, and both for civil security or military security matters⁵³.

Moreover, the boundaries of this industrial sector look fuzzy considering the wide range of markets covered by the previous definition. In addition to the defence industry, one could also take into account the building monitoring industry that manufactures fire protection and access control solutions; the industrial automation and control industry supplying various forms of sensors and communication devices; the scientific instrumentation industry that provides X rays, radiological detection devices; as well as the information and communication technology industry offering communication or encryption software, even antivirus. To a certain extent, Insurance companies could also be included as they reduce the cost of an undesired event for individuals or companies⁵⁴.

As the Carlos Mari Sempere's study shows, trying to define the security industry raises many conceptual issues. It is difficult to find a common

53. Ibid, pp. 6-8.

54. Ibid.

denominator to all the activities and production intended to secure, be it in terms of customer base or solutions, as it can be applied to the defence industry. Based on this insight and on our previous developments on the security concept, we will now propose an alternative conceptual approach to the security industry.

Conceptualizing the security industry

As for the definition of the concept of security, two approaches can be adopted, one exclusive, and the other all-inclusive, so-to-speak. The first is the one Carlos Marti Sempere used for his economic survey of the security industry. Like the sector approach for the definition of security, it consists of a narrowing of the scope of the definition by adding specific descriptive elements and excluding other potential understandings of the concept. This can be done with references to specific threats, security referents, or security measures⁵⁵. But it could be remarked that this exclusive approach, without proper contextualization and if not anchored to an agent's experience of insecurity, objectifies threats and reproduces a very specific understanding that can therefore be contested, making the definition less relevant. Despite its imperfection, it may however represent the best way to go if the aim is to provide an exhaustive economic assessment of this sector.

This paper proposes however to adopt another approach, which is all-inclusive. It acknowledges the complexity of conceptualizing the security industry as a whole and in a workable way and suggests instead to speak of 'security industries'.

55. Sempere spoke rather of 'capabilities'. He listed the following: intelligence and surveillance, prevention, protection/denial, interdiction or crisis management, response and recovery and attribution. See SEMPERE, Carlos Marti, *A Survey of the European Security Market*, op.cit, pp.4-5.

In the previous section, security was presented as a reflexive concept, object of strong political discussion between scholars and policy makers in charge of its definition. From a critical constructivist perspective, it has been decided that its definition should remain very generic, and not be associated by definition to a situated understanding of security, be it in terms of threat, the referent of security, or a specific security measure or technique. It is with the same posture we choose to define the security industry. Rather than stating what kind of, or whose security the security industry is or should be dealing with, the paper proposes to start with a broad theoretical definition based on our approach to security. We argue that security industry can be defined in its most generic sense as follow:

The security industry is defined as the sum of economic activities producing goods and services intended to increase the assurance for a given agent that its acquired values won't be jeopardized.

It's beyond dispute that searching of a common denominator between all the products that contribute and are used to secure, makes the definition too generic, difficult to operationalize and therefore difficult to manipulate for an empirical study of the industrial sector as such, specifically in economic-industrial terms. If, theoretically, the definition shows a certain degree of universality, it is too broad for scientific use. Indeed, according to this definition the defence industry, as well as the pharmaceutical industry, can be considered part of the security industry sector.

In this light, it can be both useless and controversial to define the security industry as a whole. More specifics seem necessary to draw the conceptual boundaries of the object of study. Empirically delimit and specify the understanding of security, in term of which acquired valued should be protected, against which threats or risks and with which measures remains necessary. This empirical anchoring could be done following the situated agency approach mentioned earlier. Even making this effort, the researcher must remain aware of inherent difficulties in selecting from the

wide range of products and services those that should or should not be taken in account

This being considered, we propose to illustrate our approach to the security industry concept using two different metaphors: the metaphor of the nebula to address the whole security industry and metaphor of a rhizome to understand the organization of this whole. Using both these tools it is argued that if one can hardly conceptualize the whole, one can try to conceptualize the parts that make it up.

The metaphor of the nebula illustrates how difficult it can be to conceptualize, beyond a purely theoretical point of view, what the security industry includes in terms of goods and services. As in a nebula, it's difficult to delimit concrete boundaries, distinguishing the core from the periphery. At first glance, looking at the final application of a product and in particular at its end users (when they are security professionals), one could identify a core with goods and services that are obviously designed to secure, regardless of the security sector: products designed for coercion and used by security forces (e.g. handcuffs, teargas grenade), products to ensure the safety of transport (e.g. speeding radars, air traffic management tools); product for environmental protection agencies (air pollution monitoring system), product to ensure security of data on the web (encryption systems)...The question however is how to delimit this list. There are many products or services about which one could openly discuss whether they are for security use. As in the defence sector, one meets the problem of the sub-systems or sub-components that compose the final security goods or service, e.g. electronics, software.

Secondly, how should one consider products and services, not primarily designed for security use, but that play - by extension - a key role in securing processes? Should one also consider architecture or construction firms as part of the security industry since the buildings they design and build take into account some security criteria to deal with earthquakes or to secure the building from undesired intruders (market sellers, beggars,

robbers, terrorists) with high walls and fences? To come back to the nebula metaphor, one may be able to point out a core (products and services for a clear security use, or for the use of security professionals) but to delimit its periphery is a harder task. The linkage between the core and periphery remains unclear, open to discussion, and the boundaries of this periphery are even fuzzier.

To deal with this rather major issue, it may be useful to change scale and perspective. For this, it is possible to rely on another metaphor: the rhizome. This image can be used to qualitatively map the organization of the security industry. Gilles Deleuze and Félix Guattari developed this idea in *A Thousand Plateaus* to approach knowledge in its multiplicity (unity which is multiple in itself) and in a non-hierarchical way, going beyond dualist categories and binary choices⁵⁶. Based on the image of a botanic rhizome, this philosophical concept portrays a whole, which does not obey to a hierarchical structure, which has no beginning, no end, and whose unity is only the reflection of the connection of multiples and heterogeneous elements. And if this whole is structured and organized around some more coherent groups or concepts, some 'plateaus', there is no base, no elements more important than others. Using the image of a rhizome, the security industry can be seen as having no core, no periphery, and being a complex aggregation of multiples industrial activities, obeying to their own logic that the researcher identifies and binds together ex-nihilo based on his theoretical choices. In such a framework, what matters is to distinguish sub-categories and apply filters to reveal them. To put it simply, instead of being studied as a whole, the concept of security industry should be deconstructed, into "security industries", i.e. some more specific sub-categories that are more identifiable and workable. But this tool requires from the researcher an act of honesty regarding his theoretical preferences and epistemological choices, recognizing that by definition, the plateau he

56. DELEUZE, Gille and GUATTARI, Félix, *Milles Plateaux*, Paris, Les Éditions de Minuits, 1980, pp. 9-38.

chooses to dissect is important within his frame of thought, but is not intrinsically more important than the other in the rhizome.

Recalling that the wider aim of this paper is to map the diversification of the defence industry in the security realm, our plateau so-to-speak, we argue that this approach, breaking down this industry into ‘industries’, favours an open-ended, detailed, and complex qualitative analysis of the diversification process. Instead of detailing what kind of security the security industry is about, and validating its links to the defence industry it sheds light, from a constructivist perspective, on how the defence industry from its standpoint defines, understands and develops its profile of ‘security solutions provider’ within the security industrial nebula.

In the following section, we suggest different referential of categorization of these security industries.

■ IDENTIFYING ‘SECURITY INDUSTRIES’: FOR A COMPLEX APPROACH

As we have seen in the first part of this paper it, the ‘security industry’ is not a concrete, intelligible and workable concept. Its coherence is only theoretical and its boundaries are fuzzy. However, we suggest that it is possible to identify and map subcategories of security industries by applying more specific categorizing criteria, therefore making it a usable concept to better understand how the defence industry is rapidly becoming the “defence and security” industry.

Deconstruct the industrial security nebula: identifying possible categories

Various criteria could be used to breakdown the security industry empirically in more coherent sub-groups.

We propose, in this paper, five referential of categorization. Each of them has its own logic, offers a specific perspective and therefore splits the wider security industry along singular lines. But by multiplying the points of view, it is possible to obtain a more complex understanding of the actual development of firms in the security realm. The only common denominator between these referential of categorization is that the industrial outcome, the product or the service and the discourse through which it is marketed serve primarily as landmarks to empirically assess where a company stands within each category.

Recalling the previous discussion on security in IR, one can start to examine the industrial provision of security goods and services using filters to analyses and deconstruct security practices, and securitisation processes, i.e. who are the end users, what is the referent of security, and what kind of threats of risks are deemed at stake. More broadly, these filters allow a distinction between different security sectors, or situated practices. It also enables the researcher to analyse more closely the industrial outcome, in technological terms (what kind of technology) and for which kind of security use(s). We present this reasoning for each criterion in detail in the development that follows

The five referential of categorization are the following:

1. The end-user's profile / economic nature of security provision: by end-user, we do not mean customers, but the actual beneficiary and/or user of the security good or service⁵⁷. Based on the profile of the

57. The users and customers can indeed be different. Emphasis is laid on end-users as we consider this is a more precise category to determine the utility of the good or services in the process of protection or securing.

latter, one can reflect on the economic nature of security provide with the good or service.

2. The referent of security /acquired values: the referential of security is the agent, the beneficiary of the process of securitisation: state, human being, environment. By acquired value, we mean the value that is at stake for the agent in the process of securitisation.
3. The kinds of threats to be dealt with: identify the kind of threats or risks that are to be dealt with the products or services by looking at discourse put forward to market them.
4. The technological profile: this refers to technological application(s) of a product, i.e. its functional identity – e.g. tracking system, protection systems...
5. Kind of security mechanism: security mechanism, covers the kind of action(s), technique(s) used or favored to increase or restore security.

The first option is to classify the provision of security goods according to the end-user's profile. One can here distinguish two groups, the public and the private end-users and derive from this classification the economic nature of the security provided via the acquisition of the good or services: security as a public or a private good⁵⁸.

Public end-users are public agencies (local, national, regional or supranational), institutions or bodies, including the military, safety personnel and agencies (fire-fighters, police, ambulance), or intelligence services. It is assumed here that public end-users provide these goods and services security as a public good. In economics, a public good is defined as a good which use is non-rival and non excludable, like air or free-to-air television⁵⁹. This provision of security is 'non rival' as it can be consumed by as many people as there are potential users, at no additional cost, and is

58. On the concept of public good and private good, see SAMUELSON, A , "The pure theory of public expenditures", *Review of Economics and Statistics*, vol. 36, n°4, 1954 pp.387-389.

59. Ibid.

‘non-exclusive’ as the beneficiary of security is unable to prevent access to any person who refuses to pay the price asked to benefit from security⁶⁰.

For their part, private end-users, i.e. nongovernmental or supranational end-users can be divided in two sub-groups. The first includes individuals and private companies, or institutions that consume security in an excludable way, rival or not, i.e. as private goods or club goods. A private good is rival and excludable, as its consumption by one person, permanently excludes any other use by another person, e.g. a car, food. A club good is a good, whose use is excludable, but non rival as it can be used by one agent without reducing or affecting the potential consumption of it by other agents⁶¹. The traditional examples used in economics are cable TV or golf fields. Applied to security, it can be the case of a housing community that pays a specialized firm to secure its buildings. The second subgroup aggregates private ends-users that use security goods and services to provide security in a non-rival and non-excludable way, as a public goods. We are here thinking of end-users such as private military or security companies which are commissioned to do public security work, or airports, or football stadium that acquire security systems to prevent the occurrence of a terrorist attack. All in all, two generic categories can be distinguished: the public security industry, and private security industry.

The second option for categorization is to look empirically at the combination referential of security / acquired valued / securing agent in the process of securitization to identify some security sectors. The referential can be the state, the society, the individual, the environment, the economy, culture... For each of them some acquired valued attached can be identified. For instance the different combinations allow a distinction between security domains. The adjective qualifying the security

60. For example, in the case of external security a tourist from a country X visiting a country Z, will benefit from the territorial protection of the country Z despite the fact that this person is not a citizen of the country.

61. BRÜCK, Tilman, Security Economics, Definition and Capacities EUSECON Working Paper series, n°1, Berlin, DIW, 2008, p. 11.

domain reflects and specifies the object of protection. In the table below we propose to rely of the different understanding of security in France.

Deconstructing security in a French political context

REFERENTIAL OF SECURITY	ACQUIRED VALUE (EXAMPLES)	SECURING AGENT / USER	SECURITY DOMAIN (in relation to the object of protection)
State	Territorial integrity; National sovereignty;	Military forces	External security; military security; nuclear deterrence;
State	Internal order; Rule of Law;	Police; courts of Justice;	Internal security;
Population, infrastructures	Assets;	Police; gendarmerie; firefighters; private security forces;	Public security; Civil or Cvilian security ⁶² ;
Individual, social groups	Assets; life;	Private security forces; private security solutions providers;	Private security;
Individual	Life; assets;	Various: police and civil security forces (first responders); health agencies;	Human security;
Borders	Control of cross borders flows; integrity of the border against undesired flows;	Customs, borders and coasts protection agencies; Frontex;	Border security;
Information systems	Confidentiality; integrity; availability; resilience;	IT companies; cyber security services companies; cyber security brigades;	Information systems security; critical infrastructure protection;

62. The concept of “civil security” is very broad and generally understood in opposition to “military security”- i.e. which is not a military matter or the responsibility of the military forces. To narrow down the scope and better connect it to the object of protection, we propose here the concept of civilian security.

Defence and security industry

Individual / populations	Health;	Sanitary agencies;	Health Security;
Environment	Environmental balance; water quality;	Various environmental agencies;	Environmental security;
Economy	Growth; employment; sustainability;	State; economic intelligence companies; agencies for innovation and development;	Economic security;

The table above is not exhaustive, other security domains can be identified and categorized: transport security, work security, social security... Moreover, the classification offered is not clear-cut. Some categories overlap with others. This reflects the aforementioned fact that many security goods and services can be used in different security domains. However, some security solutions are or have, so far, been unique to some security practices. In that light, one could reconsider the defence industry's traditional and central feature, to provide goods and services for military use in the wider objective of securing the state's territory and sovereignty (i.e. external security), to see if the goods and services currently developed are being used in other security domain, like internal security, environmental security, etc.

In the same vein, one could try considering the security goods and services through the lens of the nature the threat they are supposed to help to deal with. The categorization has however to be related to a specific and situated experience of insecurity. The threat assessment changes from a country to another, from an agent to another. One could separate them into two groups: the human induced threats/risks (e.g. cyber threat, terrorism, conventional military attack) and the non-human induced threats/risks (e.g. pandemics, natural disasters). As highlighted earlier, the classification is however problematic to some extent as many goods and services can be used to deal with various threats, human induced or not.

Moving away from the categorizing referential applied to the analysis of security policies, classifying the products according to their technological application, as the private market research institutes do, is also an option: tracking systems, detection systems (sensor, alarm), protection systems (armour, safe, locks), surveillance systems (CCTV, radar, infra-red cameras), video surveillance, fire protection, biometric identification solution, communication systems, cybersecurity software and hardware, fire protection...And on the services side: manned guard services, and the intelligence services. This mode of categorization is appropriate to think in terms of market with a high degree of precision and collect economic and commercial data. It is also a useful way to look at and map industrial diversification strategies.

Finally goods and services can be sorted out in terms of capacities and functions in a security apparatus. This is the methodology Carlos Marti Sempere used for its survey of his security industry⁶³. He distinguished the following capacities:

- Intelligence and surveillance;
- Preparedness (i.e. training);
- Prevention;
- Protection and Denial;
- Interdiction or Crisis management;
- Response and recovery;
- Attribution/forensics (i.e. identify source and cause of damages);

If each of these options for categorization offers specific profiles of security industries, none of them enables the analyst to delimit clear-cut sub-categories that can be distinguished with certainty or that can be economically measured. They reveal however sub-categories that are conceptually more operational and less confusing than the whole concept of security industry. Moreover combining them allows a complex and

63. SEMPERE, Carlos Marti, *A Survey of the European Security Market*, op.cit, pp. 4-5.

multidimensional qualitative understanding of the diversification of the defence industry in the security realm.

■ FOR A MULTIPLE AND CROSS-FEEDING QUALITATIVE APPROACH OF THE DIVERSIFICATION OF THE DEFENCE INDUSTRY IN THE SECURITY REALM

Bearing in mind this paper is written in the wider framework of a study on the diversification of the defence industry, we suggest that the different ways of categorizing the security industries presented above offer a basis for a more nuanced understanding of the current evolution of the defence technological and industrial base.

Starting from our definition of the whole security industry, we argue here that defence and security industry are not two distinguishable entities. The broad definition we bring forward theoretically encompasses the defence industry. The latter contributes to provide to some agent the assurance that their acquired values won't be jeopardized. In the case of defence companies, the acquired values are - by extension – those at stake in a defence policy, e.g. the territorial sovereignty of a state and the life of its population⁶⁴.

The question is then how to locate and characterize the defence industry following the referential of categorization presented above. How does the defence industry fit in this framework? Unlike the case of the security

64. See the definition provided by the French Defence Policy: “la politique de défense a pour objet d’assurer l’intégrité du territoire et la protection de la population contre les agressions armées (*The defense policy aims to insure territorial integrity and the protection of the population against armed attacks*)”, Article L1111-1 du code de défense, modifié par LOI n°2009-928 du 29 juillet 2009 - art. 5.

industry, there is a more extensive literature that can help answer this question⁶⁵.

Traditionally, in the literature on arms production, the defence industry is defined in the broadest sense as the industrial assets, which provide key elements of military power, in other words, companies that provide “defence and defence related equipment to the defence ministry”⁶⁶. It is not a clear statistical category, nor is it a homogenous entity. It involves various types of industrial activities – e.g. aerospace industry, chemical industry, motored vehicles, electronics, transport equipment, weapons and ammunitions; from small to large-sized firms, public or privately owned. Often, companies providing industrial solutions to the military have civilian productions too but the degree of specialization in the military production and dependence on military sales and civil sales can vary to a great extent⁶⁷.

This broad definition raises some issues. A key object of discussion is usually whether to consider as defence or arms producer only firms providing “weapons’ to the military or if it should also include producers of non-weapons items, for military purposes or not, such as food, furniture, office equipment, communications devices... The question of whether services such as cleaning, catering, telecommunication, and construction should be included might also be raised, as well as that of the supply chain, components suppliers and raw materials. In a sense, the same kind of problems Sempere had to deal with in his study trying to set boundaries on the security industry appear here. Moreover, historically speaking, arms production changes as new threats and new technologies emerge. The

65 We use defence and arms industry as synonyms. While the literature in defence economics favors “arms industry” and “arms production firms” terms, we prefer the more neutral defence industry.

66. DUNNE, Paul, “The Defence Industrial Base”, in HARTLEY, Keith, SANDLER, Todd (Eds.), *Handbook of Defense Economics*, vol. 1. Amsterdam, North Holland, 1995, p. 402.

67. HARTLEY, Keith, “The Arms Industry, Procurement and Industrial Policies”, *Handbook of Defense Economics*, vol. 2, Amsterdam, North Holland, 2007, pp. 1141-1144.

kind of weapons produced has significantly changed and diversified from the early cold-war period to nowadays.

We meet here a deep conceptual issue: how to integrate and locate the defence industry in the wide security industrial nebula if the sector is also complex, multiple and not clearly delimited?

As was the case for the security, industry, we can either adopt an exclusive definition or a all- inclusive approach. The exclusive approach could, for example, focus on the production of weapons systems. Since most of the time the companies providing weapons systems also have civilian activities, we could specify, as Sköns and Dunne did for example, that we refer only to the arms-producing activities of companies⁶⁸. For its part, an all-inclusive approach would consist in taking into account all the activities contributing to the production and maintenance of military equipment. In the literature, this is translated by the concept of “defence industrial and technological base (DITB)” rather than arms or defence industry. Sköns and Dunne suggest indeed that the DITB covers the “entire national resources required for providing and maintaining the national requirements of military equipment.”⁶⁹.

For the security industry, an all-inclusive approach has been preferred to an exclusive one in order to go beyond the ambiguity and controversy linked to the definition of security, which is subject to multiple understandings. For defence, there is no such ambiguity, there are no strong and acknowledged competing views on what defence should be about. There is a dominant understanding of what the defence domain covers. The main point of discussion deals with what kind of military threats and kind of war, armies should be prepared to deal with. Defence is by definition linked to the military sphere. Choosing an exclusive approach to support our understanding of the defence industry is therefore less

68. SKÖNS, Elisabeth, DUNNE, Paul, “Economics of Arms Production”, in KURZ, Lester (Ed.), *Encyclopedia of Violence, Peace and Conflict*, vol. 1. Oxford, Elsevier, 2009.

69. Ibid.

problematic from a theoretical point of view. The difficulty and controversy consist, as we pointed out, to effectively limit the scope of companies to be covered by the definition to take into account activities such as R&D or sub-system or components.

So to clarify our conceptual approach of the defence industry and locate it inside the security industrial nebula, we adopt an exclusive approach of the term, following most notably the methodology of the Stockholm International Peace Research Institute, which does an annual ranking of the most important arms producing companies⁷⁰. We define the defence industry as the sum of companies engaged in the production of goods and services specifically designed for the military and military use⁷¹, these companies are considered actors of the defence industry regardless of the proportion of their military sales in their total sales. Their arms-producing activities account however only for their participation in arms production.

One may also add to this definition that both empirically and from an economic standpoint, the defence industry has developed unique features that make it different from other more or less cohesive industrial groups. To paraphrase Sköns and Dunne, the first of these characteristics is that the defence industry is more subject to state control (competition regulation, specific export control national and international regimes, selective protectionism, for instance) and regulation than any other production, as its industrial output are means of violence –The second is that it operates under different economic conditions, i.e. in a monopsonic market with the state, or state(s) as only purchaser⁷². The state, through its procurement decisions and investments, has a major influence on the “volume of orders, the type of equipment to be produced, and the technology to be developed”⁷³ and in fine, on the size and structure and

70. http://www.sipri.org/research/armaments/production/Top100/source_methods. Uploaded on July 26th, 2011.

71. This formulation does not necessarily exclude dual-use goods and services.

72. SKÖNS, Elisabeth, DUNNE, Paul, “Economics of Arms Production”, Op. cit.

73 Ibid.

the economic sustainability of the major arms producers. On the other hand, arms producers have a close and special relationship with the customers: procurement executives, program managers and the military. These settings make out the defence market as somewhat closed, with high entry and exit barriers, particularly for major, higher value complex programs that require know how, skills and a good understanding of the client, the institution in charge of defence. . Major firms specializing in arms production therefore have much better chances to obtain government contracts to manufacture weapons systems than regular commercial firms but major arms producers may also have difficulties to leave this industry and deal with commercial market settings. The concentration on the arms market is consequently high; the defence industry is dominated by as small number of major arms producers.

All things considered, to assess and place the arms industry in the wider security nebula, it is relevant to anchor it empirically to the defence industry as defined by the, SIPRI's definition and method to rank the 100 world's biggest arms producer (china excluded⁷⁴). Even if there is no total figure for global arms production, it is inferred here that the top 100 account for the most significant part of world's arms production and that it is enough to capture major trends in the global arms industry. Focusing on this ranking enables to uncover current pattern in arms production and compare them historically: who are the major producers, what are they producing, to which extent are they dependant on arms sales (i.e. sales to the military). This ranking is therefore considered a relevant sample to revisit the profile of the defence industry within the security industry with the five referential of categorisation we drafted above. In other words, when speaking of the defence industry we refer to major firms, (in terms

74. China is not covered in the top 100 due to a lack of satisfactory data, see: http://www.sipri.org/research/armaments/production/Top100/source_methods. To diversify sources, one can also rely on annual ranking made by Defense News. http://www.defensenews.com/archives_top.php. Defense news and SIPRI rankings usually highlight the same trends.

of annual arms sales) able to manage major state-funded contracts for the design and production of major platforms and systems for military use.

The question now is how to assess its position and evolution within this security nebula. We may base the analysis on several empirical sources. The very first material for investigation are the annual reports when they are available, then, companies websites, interviews when possible and finally secondary sources of information such as specialized periodicals and studies. The most important is to identify what is produced, for whom and which purpose(s), to see to which extent these variables are changing. There are important elements that might be worth being looked at to see if the change is part of a clear strategy. This first one is the organization/structure of the firm, in terms of divisions. How they are broken down and how they are labelled. We can also look for clear mentions of strategies for organic growth, and if yes, in which technological sectors and for which customers. We may also look specifically at R&D projects and finally one should pay attention to companies' records regarding merger and acquisitions.

Following this parenthesis on the definition of the defence industry and sources of information, let's now try to apply the classification options of the security industries to the case of the defence industry.

To begin with the first and most evident category: end-user's profile / economic nature of security provision. The defence industry has, according to our definition, the ministry of defence and the military forces as a prime customers and end-users. In this regard, the industrial output consists in technologies and services being specifically developed for military use. The end-user being a public state agent, we infer that the military use is meant in theory to provide security as a public good, for whole benefit of the community⁷⁵. We therefore classify the defence industry as a public

75. It could be argued that in some non-western countries, the military forces are used to protect private interests, e.g. private mining fields in Congo, or the private assets from ruling parties.

security solution provider. From that point of view, it would be interesting to see if defence companies are increasingly meeting a demand from other public end-users in the public security domain such as, e.g. police departments, intelligence community, ministries of interior customs, as well as from private or semi private actors such as airports a mining company wishing to secure its mining and extraction field with surveillances systems.

Regarding the classification referent of security/acquired value, and in fine, the security domain, one can also rely on the fact that the products and services are designed for military forces. Considering the profile of the military forces as security professionals, we can deduce by extension that defence industry's products and services are primarily designed to contribute to the state's security (referent of security), and to guarantee "national sovereignty" (acquired value), in other word, the defence industry's provision of goods and services belongs to the domain of external security. One may however argue that in some countries like France (with the gendarmerie) and Italy (with the *carabinieri*), the military have also been involved in internal security matters still dealing with the security of the state but not exclusively, taking into account another kind of acquired values: e.g. internal order, rule of law. The same could be said of intelligence services. The general pattern of the solutions provided by the defence industry is that they deal mainly with external security matters, in particular when focusing on the highest value contracts for the production of significant military platforms: fighter aircraft, military vehicles, helicopters, ships, satellites, UAV. Here, it would be interesting to see if technological solutions and services funded by and developed for the military and for external security are also marketed for other security domain, e.g. Internal security, border security, cyber security, human security, or even environmental security⁷⁶. We already know that UAVs are

76. Lockheed Martin is advertising for example its "Energy and climate" capabilities and proposes some solutions for climate monitoring (integrated ocean monitoring systems) and

used to monitor the border between the USA and Canada is in that light and that the EU is also looking at this option for to secure its Mediterranean border⁷⁷.

In terms of threat to be dealt with, one relies again on the fact that through their threat assessment, demand in means and important investments, the military forces shape an important part of major defence producers industrial output. Rare are the projects developed by the industry itself without state support, or without a guarantee of state purchases.. To sketch a general pattern vis-à-vis the kind of threat that are to be dealt with the security solutions developed by the arms industry, one can highlight that, as a legacy of the cold war, most of the current most expensive weapon systems on the market have been originally developed for a “great powers war scenario”, i.e. a war that would oppose states, based on a clausewitzian model. The kinds of threats are therefore conventional military threats by other States and about military invasion by land, sea, and air, maybe including the use of nuclear weapons... Most of the systems developed under the futuristic vision of the Revolution of Military Affairs (RMA) in 1990, have been designed to fight this kind of warfare, i.e. conventional conflict between states. Western states, which host most of the major arms producers by contract value, have however been reviewing their threat scenarios over the last decade. New securitization discourses brought asymmetric threats such as terrorism, ballistic, biological and chemical or even nuclear threats from a “rogue state” on top of the agenda. Wars in Iraq and Afghanistan pushed states taking part in coalition operations to revise their material needs to prioritize those dealing directly with combat realities. The participation in UN peacekeeping missions also requires other equipment than those

energy efficiency that are relevant for environmental security domain, but that are in fact technically spun off from military applications (UAV, command and control, ships...).

77. BOULANIN, Vincent, BELLAIS, Renaud, Towards a high-tech "Limes" on the edges of Europe? Managing the external borders of the European Union, Conference Paper (unpublished), presented at the Conference Fences, Wall and Borders, States of Insecurity ?, UQAM, Montréal, Canada, May 17th, 2011.

originally developed for territorial defence. Therefore, the industry changed to adapt to these new needs and is developing new solutions. On this, it could be noted that threats that are identified are no longer solely the purview of the military forces, but also of police forces, borders guards, civil rescues forces. To go further, it has been argued that tasks entrusted to military forces in peacekeeping operations increasingly resemble those of the police forces⁷⁸, which may indicate a diversification in demand for products initially aimed at military customers. It would be interesting to see how arms producers market and promote security solutions to other categories of security professionals. Here we may observe how arms producers present the versatility of their solutions to other needs, such as highlighting for instance how drones can be used for monitoring cross-border flows of people or to locate civilians after a natural catastrophe and therefore help first responders rescue efforts. Looking at the threat variable, it would be relevant to reveal to what extent arms producers are developing solutions that are less military specific, or are just repackaging their military solutions for other security needs with the help of marketing tools.

With respect to the classification by technological applications, it is hard to sketch a generic pattern in arms production, even if one focuses on the top producers. Major arms companies are usually engaged in many different technological markets, and therefore a wide range of technological applications. For example Lockheed Martin, the most important arms producer by contract value in both SIPRI's and Defense News' Top 100 for the year 2010, makes aircrafts, missiles, space technologies, and electronics. Not to mention the non-military specific markets, such as

78. HANON, Jean-Paul, « Militaires et lutte antiterroriste », *Cultures & Conflits*, n°56, 2004 ; DAL LAGO, Alessandro, « Police Globale », *Cultures & Conflits*, N° 56, 2004. « L'éméute est une fenêtre qui s'ouvre sur le monde extérieur à l'Etat. Entretien avec Alain Bertho », GAULÈNE, Mathieu pour Nonfiction.fr, http://www.nonfiction.fr/article-3570-p8-lemeute_est_une_fenetre_qui_souvre_sur_le_monde_exterieur_a_letat_entretien_avec_alain_bertho.htm ; consulté le 25 février 2011.

homeland security, which is an umbrella term used by the company to covers solutions for border security, critical infrastructure protection, emergency management and response, information security, and transportation security⁷⁹. One may however consider SIPRI's typology of military industrial sector for the TOP 100 as a reflection of the core military markets⁸⁰:

- Artillery
- Aircraft
- Electronics
- Engine (aeronautic)
- Missiles
- Military vehicles
- Small arms/ammunitions
- Services
- Ships
- Space
- Components (for markets mentioned above)

The question then, could be the following: to what extent arms producers operating in these markets are expanding their activities beyond this list to increase their presence in security related markets? In other words, are they developing specific solutions for non-military security use or are they mainly leveraging solutions initially designed for military customers? Once again, Lockheed Martin's case is interesting to better understand the process: what kind of technological capabilities and markets are located under the 'homeland security', 'energy and climate', and 'surveillance and fire control' capabilities of the company? A close look indicates that the

79. See Lockheed Martin's Website:

http://www.lockheedmartin.com/capabilities/homeland_security/, uploaded August 23, 2011.

80. See JACKSON, Susan, "Chapter 6. Arms production", *SIPRI Yearbook*, Stockholm, SIPRI, Oxford University Press, 2011, pp. 257-262.

homeland security capabilities header represents a large variety of security relevant markets: biometrics, detection systems, command and control systems, IT infrastructure, chemical and biologic sensors, UAV, emergency response systems. Some of these solutions are directly inherited from the company's military-related activities (e.g. command and control systems), while some others are coming from the civilian commercial sector (e.g. biometrics). A systematic analysis of the companies in the top 100 companies could be conducted along this line and would provide a better assessment of the links, in solutions identification, design and manufacturing, between defence and security, and by extension, a better understanding of the defence industry diversification process and its depth.

Finally, regarding the classification by mechanism and function in the security apparatus, it is not possible to classify the arms industry as a whole within one category for the same reason given for the precedent referential. Major companies that account for the most significant part of the global arms industry provide solutions that cover various capabilities and functions in the security apparatus. This exercise might be easier for smaller companies, targeting which kind of security capacity they enable with their industrial output. Therefore, case studies should be conducted at the company level, investigating what kind of security capacities is provided. Reconsidering Sempere classification of the security capacities, we suggest that military technology deployed for combat, e.g. fighter aircrafts, tanks, missiles, should, in a generic fashion, be classified as part of the "protection and denial" security mechanism, and as part of a category "interdiction" that we rename here "intervention". A working research question could be that a number security capacities are new to arms producers, e.g. crisis management, while others clearly are the result of opportunistic and strategic diversification. This is most notably the case for the "intelligence and surveillance".

To conclude the referential that primarily makes the defence industry a distinct subcategory of the security industries is the profile of the end-user of its industrial output: the military forces. From there, one finds that the defence industry develops solutions to provide security as a public good, in that they contribute to state's external security by granting the military options to meet symmetric military threats from other states, and increasingly asymmetric threats. On the other hand, it has not been possible to characterise the defence industry in a generic manner using categorisation of its industrial output in terms of technological markets, and, by extension, by the kind of security capacities in the wider security apparatus. A more detailed and nuanced analysis based on empirical grounds, i.e. on a sample of companies, would be required to achieve such a goal.

Nevertheless, the framework provides a few leads to assess the diversification of the defence industry within the security realm. Considering its defining character for the defence industry, the first variables to look at are: the end users' profile and the economic nature of security. The question that should be raised is whether the defence industry is increasingly developing its commercial base with other public security professionals and private security professionals that provide security as public good and potentially private end-users for private security use. It might also be interesting to see to which extent the defence industrial output is marketed for other security domains, and to deal with different threats and risks than traditional military ones. In a more detailed fashion and based on a limited number of cases, conducting an investigation at the company level would be useful by tracking the evolution of firms beyond their traditional military markets, showing what kind of technological solutions are of primary interest to them, i.e. biometric solutions, communications or detection systems... Using all these strands, we can draw a wider picture of the kind of security mechanisms that are privileged by the industry.

Combining these different referential of categorization in an empirical study offers to reveal a nuanced and multi-level understanding of the diversification of the arms industry in the security realm. It shows how defence companies are defining their approach to security.

■ CONCLUSION

This article has dealt with the issue of defining the security industry, using a reflexive and constructivist approach, in order to build the foundations of a theoretical framework to analyse the diversification of the arms industry in the security realm. The debates surrounding the definition of security in the field of IR were first highlighted. They are closely related to the proposition of the Copenhagen school to open up the concept of security, suggesting that security can be understood in very different ways and remains a politically contested concept that, according to constructivist scholars, calls for a reflexive framework. A situated agency approach enables the researcher to empirically anchor the concept by identifying how security is more specifically defined from one agent to another. Based on these starting elements, a reflexive approach was used to engage in the discussion over the definition of the security industry. The key conclusions are the following.

- ◆ To write about the security industry in an encompassing way can lead to confusion, as security is a malleable concept having relevance to every aspects of human and social life. In order for it to be workable, it can either be narrowed to a situated and very specific understanding of the concept; or it can go through a process of identification of elements of unity, in order to find the smallest common denominator to all the acceptations of the term. If the last option offers not to choose and/or reify any specific security agenda, it elevates the concept to such an abstract level that it becomes evasive, and useless for a scientific

use. Thereby, by definition, the concept of security industry refers to nothing concrete if the use of the word “security” has not been preliminary delimited to describe a very specific sub-category and attached to a situated understanding of the concept.

- ◆ After examining definitions, it was found preferable to speak about “Security industries”, in a plural form, instead of the security industry, which implies a unified and coherent group. The metaphors of the nebula or rhizome were employed in order to integrate a level of complexity in the analysis. One can speak about a security industrial nebula as this sector is difficult to apprehend and conceptualize as a whole. But as in a rhizome, it is possible to identify units, subcategories that compose it with a certain degree of coherence and relevance. Different lenses can be used to make the different components of this nebula visible: distinguishing categories according to a threat-based, or capacity-based approach, or according to the kind of customers and/or kind of technological solutions. While acknowledging their shortcomings (also difficult to map), these sub-categories are considered more workable, when properly identified, as they are more precise than the concept of security industry in its widest sense and are not subsumed under a narrower or normative security discourse.
- ◆ More concretely, this reasoning casts a new light on the diversification of the defence industrial supply into the security realm. In this framework, the defence industry is a subcategory of the security nebula that has primarily been defined by the profile of its end-users: the military forces. The referential of categorization drafted above allows a multiple and more detailed understanding of the current diversification trend that has characterized major arms producers industrial strategies for the past few years. They can reveal how the defence industry, as an

agent with its own approach to security, develops, declares and reifies a very specific understanding of what security should be about and how to obtain it.

In this framework of analysis, the arms industry is not going closer to a separate entity that would be embodied by the security industry; it is a singular subcategory of the security industrial nebula whose characteristics are currently being recasts. The arms industry is redefining itself as a security solution provider and is moving away from the pattern that made it such a singular ensemble during the cold war era.

Any academic or practitioner working on arms production can empirically testify to the important qualitative changes occurring in the defence industry. The arms producing sector, which was never easy to define as an identifiable and singular ensemble, is indeed becoming even more difficult to delimit and analyse. In that light, this article provides a modest attempt to develop a conceptual framework and tools to identify qualitatively and at a macro-level the different variables and dynamics underlying this change, in particular the so-called diversification in the security industry. A natural follow-up to this would be to conduct cases studies on a handful of major arms producers.

Defence and security industry: Which security industry are you speaking about?

This article deals with the issue of defining the security industry, using a reflexive and constructivist approach, in order to build the foundations of a theoretical framework to analyse the diversification of the arms industry in the security realm. It argues that existing definitions offered by the current literature on the security industry reify situated and narrow understandings of security. In contrast, this paper considers security as an open-ended and polysemous concept, and suggests therefore that one should write about security industries rather than security industry, the latter being hard to conceptualized as whole. Indeed, like a nebula, it covers a vague and complex ensemble, with many different actors, and a wide array of technologies and security objectives, in which the defence industry could be a component. From that standpoint, this article proposes to break down various possible understandings of the "security industry" concept according to different referential of categorisation. This process enables theoretical identification of specific forms of security industries and more importantly, it offers to reveal the particularities of the defence industry as a security solution provider evolving through a diversification process.

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ISSN : 2116-3138 ISBN : 978-2-11-129683-1