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Military Discourse Patterns and the case of Effects-Based Operations

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Introduction

Why is it that, in the military field, some concepts become so dominant that they profoundly impact on, perhaps even dictate, the development of military organizations for a specific time?[1] Why do other concepts never gather enough momentum to make a similar impact on the military? How is it that once highly acclaimed concepts are, in the end, discarded?

Military innovation research approaches these questions from a variety of angles that emphasize such different innovation causes as individual choice, institutional opportunities, systemic pressures, and organizational culture. Yet the research focus usually sets in late in the innovation process when the decision to adopt a novel concept or technology is taken. Indeed, what should innovation research focus on if not on the decision to innovate? Yet, I argue that the sole focus on the adoption decision limits the

[1] I like to thank Jeronimo Barbin, Steffen Kraft and Lukas Zidella for comments on an earlier version of this article. The views expressed in this article are those of the author.

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insights innovation research has to offer. By broadening the research focus to include communication processes prior to and after the adoption decision we might find other, and perhaps more comprehensive answers to the questions raised above.

Every military innovation, be it as material as an aircraft carrier and as conceptual as network-centric warfare is a social construction.[2] Thus, its meaning is not derived from its firepower or its application in conflict but from the way social actors constitute it in discourse. This view rests on the premise that the way a novel concept is framed and communicated within a military organization can be expected to have an impact on the decision about its actual implementation. I suggest two shifts of perspective in military innovation studies, from the adoption decision to communication processes, and, thus, from the conventional focus on actors, institutions and culture, to a focus on the military discourse. To exemplify this I present in this article the findings of an empirical research project on the discourse about the effects-based operations (EBO) concept within the US military.[3] By introducing a framework of argument-based and language-based discourse elements, I show that the technology-driven EBO concept arose in the wake of the equally technology-driven US military transformation discourse and fell when this discourse shifted towards a human-centric approach to war. I also show that the EBO discourse was characterized by a linear and homogenous pattern, which might have contributed to the concept's quick and ultimate demise.

What, then, is an EBO? The concept first appeared within the US Air Force in the wake of the Gulf War in 1991 as an alternative to the traditionally attrition-based American way of war.[4] The main idea is that victory does not necessarily require the annihilation of the enemy. Instead, concerted tactical operations aimed at achieving pre-defined "desired effects" will lead to similar strategic outcomes. EBO became one of the

[2] On the idea that reality is socially constructed see P. L. Berger and T. Luckmann, *The social construction of reality; a treatise in the sociology of knowledge* (Garden City, N.Y.,: Doubleday, 1966). On the social construction of technology see D. A. MacKenzie and J. Wajcman, *The social shaping of technology*, 2nd ed. (Buckingham Eng. ; Philadelphia: Open University Press, 1999).

[3] The EBO study presented in this article is part of a larger project on the sociology of military concepts the author is conducting at the Bundeswehr Center for Military History and Social Sciences, Germany.

[4] J. T. Correll, "The assault on EBO," *Air Force Magazine* 2013, January issue (2013).

prime concepts of the US military transformation between 2001 and 2006.[5] However, shortly after and after much debate, its defence-wide introduction was stopped in 2008. By that, it is one of the few military concepts officially discontinued instead of being simply replaced by a successor concept. This makes EBO a crucial case for analyzing its discourse patterns.

The issue of military innovation discourses is examined by conducting a theoretically structured and focused single-case analysis. To catalogue discourse elements, the complete text body of the *Joint Force Quarterly* (JFQ) professional military journal was assessed with the help of a computer-assisted discourse analysis tool.

The following section provides a short history of the EBO concept. This is followed by a discussion of existing approaches to explaining innovation diffusion. Subsequently, a discourse-based framework is developed that complements these approaches. The next section presents the results from the analysis of the EBO discourse. Finally, the merits and limitations of a discourse view on military innovation are discussed.

A short history of Effects-Based Operations

First instances of EBO-thinking and speaking of "effects" appeared in the days and weeks before the first Gulf War (1991). Lt Col. David Deptula, a US Air Force fighter pilot, applied EBO principles when he was a planner for air attack operations during Operation Desert Storm. It was Deptula who, in 1995, published what might be the first comprehensive text about EBO principles.[6]

Although Deptula can be regarded as the inventor of EBO, the concept is often credited to Col. John Warden, also of the US Air Force and author of *The air campaign: planning for combat*.[7] Warden, who had gained a reputation as an air war theorist, was

[5] T. Terriff, F. P. B. Osinga, and T. Farrell, *A transformation gap? American innovations and European military change* (Stanford, Calif.: Stanford University Press, 2010).
[6] D. A. Deptula, *Firing for effect: change in the nature of warfare* (Arlington, Virginia: Aerospace Education Foundation, 1995).
[7] J. A. Warden, *The air campaign: planning for combat* (Washington: Pergamon-Brassey's International Defense Publishers, 1989).

head of the so-called Checkmate Division in the Pentagon, a mini think tank with the job of assessing past missions to derive inferences for future missions. In August 1990, Checkmate was tasked with devising an air campaign called Instant Thunder for the US military operation expected against Iraq in the wake of Saddam Hussein's invasion of Kuwait.[8] Deptula was a member of Warden's staff and thus involved in Checkmate's pre-war planning. Between the summer of 1990 and the spring of 1991 Deptula was, furthermore, the principal offensive air campaign planner and member of the Iraq Target Planning Group in Riyadh, Saudi Arabia.

The first mention of effects-based thinking and the first rhetorical reference to it were attributed to Deptula: "In particular, the personal log for Lt Col David Deptula for 11 August 1990, when the Instant Thunder concept was being worked up by the air staff, has a sketch of a flow plan for attacks on Iraq in support of the air campaign with a final category: 'Desired Effect'".[9]

After the first Gulf War, and in the midst of an intellectual debate in the US military about the so-called revolution in military affairs, Deptula published a paper called *Firing for effect: change in the nature of warfare*[10]. In it, Deptula drew conclusions from the aerial campaign in the Gulf War and argued in favour of simultaneously attacking enemy targets. With the help of air power, *parallel war* – a concept previously advocated by Col. Warden – would become possible.[11] Deptula stated that parallel war would constitute a change in the nature of war so profound that it resembled a paradigm shift, similar to the shift from the Ptolemaic and Copernican view of the universe. In the paper he also referred to "effects-based" planning and thus presented effects-based terminology to a wider audience.[12]

[8] E. A. Cohen, *Gulf War air power survey* (Washington, D.C.: Office of the Secretary of the Air Force, 1993), p. 22.
[9] Ibid., p. 24.
[10] Deptula, *Firing for effect: change in the nature of warfare*.
[11] J. Warden, "Air theory for the twenty-first century," in *Battlefield of the future: 21st century warfare issues*, ed. B. R. Schneider and L. E. Grinter (Maxwell Air Force Base, Alabama: Air University Press, 1995).
[12] Note that in a thesis from the Air University from the 1992/1993 academic year also appears the phrase "effects-based assessment". See J. T. Sink, *Rethinking the Air Operations Center. Air Force command and control in conventional war* (Maxwell Air Force Base, Alabama: Air University, 1994).

Following his assignment with the Air Staff, Deptula held several other posts in Washington, D.C., for example as the Air Force representative on the National Defense Panel. According to Deptula, these assignments gave him ample opportunity to spread the EBO idea within the Air Force and in the wider defence community.[13]

Between 1995 and 2000, the focus on effects slowly started to permeate the Air Force and the joint community. The 1996 publication *Joint Vision 2010* by the Chairman of the Joint Chiefs of Staff, for example, extensively used 'EBO speak' such as "massed effects" and "desired results".[14] EBO also loomed large in the 1998 *Air Force Doctrine Document* as the following statement reveals: "The focus at a given level of war is not on the specific weapons used, or on the targets attacked, but rather on the desired effects."[15]

Up to 2000, the term effects-based had been used increasingly, often as part of an argument supporting another military concept (e.g. network-centric warfare, parallel warfare). By the year 2000 finally, attention to EBO had reached critical mass. Subsequently, official documents, professional articles and scientific studies emerged, which focused on EBO specifically.

Six years after *Firing for effects* and on the eve of the US military transformation period (2001-2006), Deptula published another paper entitled *Effects-based operations: change in the nature of warfare*.[16] Most interestingly this publication was a nearly identical copy of Deptula's 1995 paper. The only differences were that, firstly, throughout the text, the term "parallel warfare" from the original version had been replaced with the term "effects-based operations", and, secondly, references to the Kosovo conflict of 1999 were made. While the recycling of ideas and concepts is perhaps common in academia, and is even more so in military staff work, the re-publishing of the 1995 paper with a

[13] Telephone interview with David Deptula on January 5, 2016. See also C. Vadnais, "Theater leaders discuss different methods of war," *Air Force Print News*, June 20, 2006, https://www.af.mil/News/Article-Display/Article/130665/theater-leaders-discuss-different-methods-of-war.; E. M. Grossman, "A top commander acts to defuse military angst on combat approach," *Inside the Pentagon* 22, no. 16 (2006).
[14] J. M. Shalikashvili, *Joint vision 2010* (Washington, D.C.: Chairman of the Joint Chiefs of Staff, 1996).
[15] Secretary of the Air Force, *Organization and employment of aerospace power.* Air Force Doctrine Document 2 (AFDD2) (Maxwell Air Force Base, Alabama: Headquarters Air Force Doctrine Center, 1998), p. 2.
[16] D. A. Deptula, *Effects-based operations: change in the nature of warfare* (Arlington, Virginia: Aerospace Education Foundation, 2001).

different title and with terminology exchanged for the key concept sponsored originally in the text, however, is remarkable.[17]

The year 2001 marked a turning point for the EBO idea, and within a matter of months EBO was widespread in publications and speeches. Furthermore, EBO was one of the concepts that were sponsored officially by the incoming US Secretary of Defense, Donald Rumsfeld, in the wake of the US military transformation.[18] EBO also became part of the military toolkit. The war game Millennium Challenge (2002), for example, tested, among other novel concepts, EBO planning.[19]

Quickly, EBO was officially embraced by the military branches in their latest military transformation plans.[20] Even the US Army, which traditionally took a rather negligent approach towards Air Force-sponsored concepts, stated in the 2003 Army Transformation Roadmap that it "will place a premium on superior situational understanding as the key enabler to allow ground forces to operate simultaneously in a distributed, nonlinear fashion that masses effects not forces."[21]

Although not yet official doctrine, some military scholars argued that aspects of EBO already had been implemented in the incursion into Afghanistan in 2001.[22] EBO were allegedly also present during pre-war planning prior to the US invasion in Iraq in 2003.[23] After the invasion, defence officials claimed that EBO had been validated during

[17] D. Murke, *Collected silences* (Köln: Kiepenheuer & Witsch, 1955).
[18] T. Duffy, "Cambone: concurrent budget, program reviews aimed at consistency," *Inside the Air Force* 13, no. 38 (2002); H. Stephens, "DOD will fund 13 advanced concept technology demos in FY-04," *Inside the Air Force* 14, no. 46 (2003).
[19] A. Plummer, "Pentagon experiment heats up to test new concepts in warfighting," *Inside the Pentagon* 18, no. 31 (2002).
[20] US Navy, US Marine Corps, and Department of the Navy, *Naval transformation roadmap. Power and access...From the sea* (The Pentagon, Arlington County, Virginia: Department of the Navy, 2002). Army Transformation Office, *Army transformation roadmap* (Washington D.C.: US Army HQ, Office of the Deputy Chief of Staff, 2003).
[21] Army Transformation Office, *Army transformation roadmap*, p. 86.
[22] M. E. Krause, "On target: organizing and executing the strategic air campaign against Iraq - book review," *Air and Space Power Journal* 18, no. 1 (2004).
[23] H. Stephens, "'Effects-based planning', 'parallel warfar'; define new air war," *Inside the Air Force* 14, no. 12 (2003).

Operation Iraqi Freedom (OIF).[24] The initial US victory in Iraq seemed to substantiate the assumption "that the integration of air power, special forces, and smaller, more mobile ground forces could enable the U.S. military to be more effective with less mass".[25]

Right from the beginning, however, opponents of the concept also spoke up. Retired US Marine Corps General Paul van Riper, for example, was critical of the US military's reliance on technology and the use of systems analysis.[26] With regard to the use of EBO in OIF, Williamson Murray, author of the 1991 Gulf War Air Power Survey, and Robert Scales, head of the US Army's Desert Storm Study Project, concluded that "(f)or all the effects-based operations and operational net assessment, the failure to understand the enemy where he lives – his culture, his values, his political system – quickly leads up a dark path where any assumption will do."[27]

In addition, a 2004 OIF lessons-learned report by the US Joint Forces Command (USJFCOM) – the joint force provider for US military missions – found that, despite an EBO planning goal, deployed forces reverted to attrition-based fighting in Iraq.[28] Notwithstanding these emerging critical assessments the Department of Defense continued to support EBO.[29]

By 2006, EBO had become part of the joint doctrine. But 2006 also marked another turning point for EBO: During the Lebanon conflict in 2006, the Israeli Defence Forces applied EBO with rather mixed results.[30] In addition, the deteriorating security situation in Iraq and the growing overall scepticism about the US military

[24] J. Feiler, "Speed, unpredictability led to victory in iraq, defense officials say," *Inside the Pentagon* 20, no. 10 (2004).
[25] E. C. Sloan, *Military transformation and modern warfare: a reference handbook* (Westport: Praeger, 2008), p. 139.
[26] E. M. Grossman, "Generals take stock of U.S. vulnerability to common technologies," *Inside the Pentagon* (2002).
[27] W. Murray and R. H. Scales, *The Iraq war: a military history* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2003), pp. 182-83.
[28] USJFCOM Report quoted in E. M. Grossman, "JFCOM draft report finds U.S. forces reverted to attrition in Iraq," *Inside the Air Force* 20, no. 13 (2004).
[29] E. Rees, "Chief DHS Technology Officer invited to join ACTD 'Breakfast Club'," *Inside the Air Force* 15, no. 43 (2004).
[30] I. Brun, "The second Lebanon War, 2006." in *A history of air warfare*, ed. John Andreas Olsen (Washington, D.C.: Potomac Books, 2010).

transformation fuelled criticism of EBO in the US defence community.[31] EBO were criticized for being too prescriptive, for assuming an availability of information about the enemy that is rarely given, and for imagining effects that are difficult to establish in advance given the complex nature of war. Military leaders started to speak out publicly against EBO.[32] One of those opponents was Gen. James Mattis, then Commander of the Marine Corps Combat Development Command.

It was Mattis, who, after becoming Commander of USJFCOM, in a now famous memorandum, directed in 2008 that the term "effects-based operations" and related concepts would no longer be used by USJFCOM.[33]

Mattis' memo marked a swift end to EBO – not only in USJFCOM but in the whole joint community. As with Deptula before him, Mattis' popularity and access to the defence community helped to spread his thoughts about EBO. Interestingly, there was only little opposition to the termination of EBO. Even the Air Force, whence EBO had originally emerged, remained silent on EBO's public demise as it suffered from the resignations of the Air Force Secretary and of the Air Force Chief of Staff at that time.[34]

Although proponents of EBO claimed that "it's not the EBO concept that's wrong, but how it's been applied"[35] the concept can be considered as dead, despite continuous attempts to revive, defend or further develop the basic ideas of EBO.[36]

This brief account of EBO's history has demonstrated that the history of the concept is also the history of its discourse. Its emergence can be traced to the publications of Air Force officer David Deptula while its decline is linked to a memorandum issued by US Marine Corps General James Mattis. The analysis of the EBO discourse may allow for insights as to how the initially positive perception of the

[31] Grossman, "A top commander acts to defuse military angst on combat approach."
[32] C. J. Castelli, "Van Riper, Deptula disagree over effects-based ops, enemy 'control'." *Inside the Navy* 19, no. 5 (2006); "Van Riper, Mattis criticize Joint Staff's Force-Development Process" *Inside the Navy* 19, no. 3 (2006); Grossman, "A top commander acts to defuse military angst on combat approach."
[33] J. N. Mattis, "Memorandum for U.S. Joint Forces Command (Subject: Assessment of Effects Based Operations)" (Norfolk: USJFCOM, 2008).
[34] Correll, "The assault on EBO."
[35] J. B. Hukill, "Maligned and misunderstood," *Armed Forces Journal*, March (2009), http://armedforcesjournal.com/maligned-and-misunderstood.
[36] IAF Newsletter, "Expanding The Envelope," *Inside the Air Force* 21, no. 31 (2010).

concept had shifted. For this purpose, in the next section an analytical framework is developed in order to assess instances of military innovation with the help of discourse analysis.

The Communication of Military Innovation

Military Innovation Research

When approaching the questions of why military organizations innovate and why certain innovations are successfully implemented while others fail, a techno-determinist answer would state, that if an innovation brings in an advantage, it will be adopted, if it does not, it will be rejected. Such a view would highlight the 'actual' effectiveness and efficiency of an innovation.

Social scientists, however, doubt that the intrinsic quality of an innovation determines its diffusion. They argue that, in the spread of novel ideas and technologies, forces other than effectiveness and efficiency are at play, or they reject the notions of effectiveness and efficiency altogether. Usually, works by social science scholars on military innovation take on one of two perspectives: a system-level or a unit-level view. There are those works that base their claims on systemic arguments, in which military change is instigated by international system-level attributes such as, for example, a security dilemma.[37] Regardless of the particular nature of the forces at play, be they cultural or material, systemic reasoning posits that military change, innovation and adoption are ultimately initiated by (perceived) system-level changes that exert either constraints or present opportunities to the adopting organization.

Unit-level military innovation research, on the other hand, focuses on the adopting military organization and attempts to explain success and failure in the

[37] T. Dyson, "European precision strike capabilities. A neoclassical realist perspective," in *Precision-strike technology and international intervention: strategic, legal and moral implications*, ed. M. Aaronson, et al., Routledge global security studies (Milton Park, Abingdon, Oxon; New York: Routledge, 2015); B. R. Posen, "Nationalism, the mass army, and military power," *International Security* 18, no. 2 (1993); G. Rose, "Neoclassical realism and theories of foreign policy" *World Politics* 51, no. 01 (2011); J. Resende-Santos, *Neorealism, states, and the modern mass army* (New York: Cambridge University Press, 2007); T. Farrell, "World culture and military power" *Security Studies* 14, no. 3 (2005).

adoption of military technologies and concepts. Research usually sets in, when the decision to adopt is about to be taken. These works, mostly single or low-N case studies, focus on different factors that might explain adoption outcomes: political institutions and civil-military relations[38], individual actors within the military[39], the financial and bureaucratic capacity to adopt[40], military-industry relations[41], and institutional and cultural causes that influence the outcome of military adoption[42].

However, the processes *preceding* the adoption decision (invention and diffusion) have, so far, received only little attention in military innovation studies. Despite the existence of some excellent works on military innovation diffusion[43], it is true also for military studies what innovation sociologist Everett M. Rogers observes for the research on innovations in general: "Past diffusion researcher usually began with the first adopter of an innovation (…)".[44] They did not study "(e)vents and decisions occurring previous to this point (…)".[45] Especially, why some military concepts and technologies are considered for adoption in the first place and others are not is not yet fully understood.

This is puzzling because, in the social sciences, not only the adoption but also the preceding spread of innovative concepts and ideas receive scholarly attention. [46]

[38] D. D. Avant, *Political institutions and military change: lessons from peripheral wars* (Ithaca: Cornell University Press, 1994).
[39] J. Law and M. Callon, "The life and death of an aircraft: a network analysis of technical change," in *Shaping technology/building society. Studies in sociotechnical change*, ed. W. E. Bijker and J. Law (Cambridge, Mass.: MIT Press, 1992); S. P. Rosen, *Winning the next war: innovation and the modern military* (Ithaca ; London: Cornell University Press, 1991).
[40] M. C. Horowitz, *The diffusion of military power. Causes and consequences for international politics* (New Jersey: Princeton University Press, 2010).
[41] M. Kaldor, "The Weapons Succession Process," *World Politics* 38, no. 4 (1986).
[42] I. Wiesner, *Importing the American Way of War? Network-Centric Warfare in the UK and Germany* (Baden-Baden: Nomos, 2013)
[43] E. O. Goldman and L. C. Eliason, *The diffusion of military technology and ideas* (Stanford, Calif.: Stanford University Press, 2003); Horowitz, *The diffusion of military power. Causes and consequences for international Politics*.
[44] E. M. Rogers, *Diffusion of innovations*, 5th ed. (New York: Free Press, 2003), p. 166.
[45] Ibid.
[46] N. Alter, "Diffusion, sociology of," in *International Encyclopedia of the Social & Behavioral Sciences*, ed. N. J. Smelser, P. B. Baltes (Oxford: Pergamon, 2001).

Rogers defines innovation diffusion the following way:

> Diffusion is the process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas. Communication is a process in which participants create and share information with one another in order to reach a mutual understanding.[47]

In order to understand military innovation processes it is thus crucial to understand, that every innovation adoption is preceded by acts of communication about the innovation. Adding a communication perspective to the existing systemic, institutional and actor-centred approaches we might thus derive at a more comprehensive picture of what influences military innovation. Military innovation, in a communication-oriented view, is a particular *discourse* in which participants agree on a shared understanding about the nature, the content and the value of a novel military idea. If we reject techno-deterministic reasoning, then the innovation discourse most likely has an influence on unit-level adoption decisions and, therefore, on the spread of an innovation 'among the members of a social system'. Although a discourse-based view on innovation diffusion within the literature on military change is yet to be developed, a focus on discourse has inspired works in the neighbouring fields of international relations,[48] security studies,[49] critical security studies,[50] and organization science.[51]

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[47] Rogers, *Diffusion of Innovations*, p. 5.

[48] C. Epstein, *The power of words in international relations: birth of an anti-whaling discourse* (Cambridge, Mass.: MIT Press, 2008); K. M. Fierke, "Links across the Abyss: Language and Logic in International Relations," *International Studies Quarterly* 46, no. 3 (2002).

[49] B. Buzan, O. Waever, and J. de Wilde, *Security. An new Framework for Analysis* (Boulder, London: Lynne Rienner, 1998).

[50] C. Cohn, "Sex and Death in the Rational World of Defense Intellectuals," *Signs* 12, no. 4 (1987); C. Peoples and N. Vaughan-Williams, *Critical security studies. An introduction*, 2nd ed. (London: Routledge, 2014).

[51] W. G. Astley and R. F. Zammuto, "Organization Science, Managers, and Language Games," *Organization Science* 3, no. 4 (1992). Note that Eden's work on organisational frames pays attention to organizational perception, but not to discourses. See L. Eden, *Whole world on fire. Organizations, knowledge, and nuclear weapons devastation* (New York: Cornell University Press, 2004). Other authors focus on strategic or political, but not on military discourses on innovations. See J. H. Michaels, *The discourse trap and the US military: from the War on Terror to the surge* (New York, N.Y.: Palgrave Macmillan, 2013); A.

There are, however, competing understandings of what discourse actually means. As a result, researchers who focus on discourse might do very different things. At least four types of discourse-centred research perspectives can be identified.[52] The first perspective is normative-theoretical and is based on the works of philosopher Jürgen Habermas, who developed a discourse ethic in which actors have a fair opportunity to speak and make their arguments heard.[53] A second perspective is critical-theoretical. Scholars focus on the establishment and mutual reinforcement of social power structures and language.[54] The third, constructivist, perspective, coined discourse analysis, focuses on the substantial arguments, on the speech acts, on actors and their position in the discourse.[55] Finally, a forth perspective – also often coined discourse analysis – is text-based and picture-based and often entails the (linguistic) analysis of statements and claims.[56] The underlying logic of this forth perspective is, that it matters *how* things are said. Discourses, in this view, are not determined by actors but develop a logic of their own. They are not mere arenas for the exchange of arguments but practices that impact on how an issue develops.

The latter two perspectives are both analytical and could, therefore, be taken as a first departure to the analysis of military innovation factors. They differ, however, in the discourse elements they study. Whereas the constructivist perspective focuses on what is said and by whom, many post-structuralist scholars analyze how, when and by whom things are sayable. Whereas the former concentrates on arguments, the latter analyzes words and phrases, pictures and other artefacts like movies. The argument-based variant has been equalled with a macro perspective, the latter with a micro perspective on discourse. Finally, some constructivist scholars argue that discourse

Major, "Which revolution in military affairs?: Political discourse and the defense industrial base," *Armed Forces & Society* 35, no. 2 (2009).

[52] M. Nonhoff, "Diskurs," in *Politische Theorie: 22 umkämpfte Begriffe zur Einführung*, ed. G. Göhler, M. Iser, and I. Kerner (Wiesbaden: VS Verlag für Sozialwissenschaften, 2011); B. Kerchner, "Diskursanalyse in der Politikwissenschaft. Ein Forschungsüberblick," in *Foucault: Diskursanalyse der Politik: Eine Einführung*, ed. B. Kerchner and S. Schneider (Wiesbaden: VS Verlag für Sozialwissenschaften, 2006).

[53] J. Habermas, *Theorie des kommunikativen Handelns* (Frankfurt am Main: Suhrkamp, 1981).

[54] T. A. v. Dijk, "Principles of Critical Discourse Analysis," *Discourse & Society* 4, no. 2 (1993).

[55] E. Laclau and C. Mouffe, *Hegemony and socialist strategy: towards a radical democratic politics* (London: Verso, 1985); J. R. Searle, *Speech acts: an essay in the philosophy of language* (London: Cambridge University Press, 1969).

[56] M. Foucault, *Archäologie des Wissens* (Frankfurt am Main: Suhrkamp, 1973); *Die Ordnung der Dinge: eine Archäologie der Humanwissenschaften*, 10th ed., (Frankfurt am Main: Suhrkamp, 1991).

participants deliberately use arguments as rhetoric action thus aiming in their research at uncovering the utility of speech[57], whereas post-structuralists care more about how discourse forms discourse subjects and their perceived aims.

As both the constructivist and post-structuralist variants of discourse analysis offer insights into the role language is playing in social interaction, they might be viewed as loosely complementary perspectives that, being brought together, offer a formidable framework for analyzing cases of military innovation.

An Integrated Discourse Framework

I posit that any analysis of military innovation benefits from insights into the arguments as well as in the linguistic styles that occur in the innovation discourse. In what follows I develop a discourse framework that overcomes the macro-micro divide explained above integrating both the argument-based discourse view, which is concerned with innovation framing, and the language-based discourse view, which has a focus on innovation rhetoric. By that I build on and expand claims of the social-constructivist variant of science and technology studies that highlight the importance of rhetorical closure[58] and metaphors[59] in the production of technology and knowledge.

Starting with innovation framing, a look at the existing innovation diffusion literature provides a valuable starting point. Rogers suggests that every innovation can be characterized with the help of five categories. These are, firstly, the *advantage* the innovation offers in relation to already established concepts or other alternatives; secondly, the *compatibility* with the audience's values and needs; thirdly, the perceived *complexity* of the innovation, which can be a hindrance to adoption; fourthly, *trialability*, which refers to how intricate it is to test an innovation prior to the adoption decision;

[57] F. Schimmelfennig, "The community trap: liberal norms, rhetorical action, and the Eastern enlargement of the European Union," *International Organization* 55, no. 1 (2001); Buzan, Waever, and de Wilde, *Security. An new Framework for Analysis*.
[58] T. J. Pinch and W. E. Bijker, "The social construction of facts and artefacts: or how the sociology of science and the sociology of technology might benefit each other," *Social Studies of Science* 14, no. 3 (1984).
[59] K. Knorr-Cetina, *Die Fabrikation von Erkenntnis: zur Anthropologie der Naturwissenschaft* (Frankfurt am Main: Suhrkamp, 1991).

and fifthly, *observability*, meaning the visibility of effects the innovation has already had on earlier adopters.[60]

Contrary to a deterministic view on innovation diffusion, these characteristics are not, however, inherent to the novel concept, idea or technology. How advantageous or disadvantageous an innovation is, or how complex and observable, is subject to communicative action. It is a matter of perception by those who seek information about the innovation. And how it is perceived by an audience is, lastly, influenced by how convincingly actors in the innovation diffusion process frame the particular innovation. In short, the value of an innovation is ascribed to it by the participants in the respective innovation discourse. They may highlight or downplay certain characteristics of an innovation and, by doing so, frame it in a particular way. It is through the method of framing that actors ascribe certain characteristics to the innovation. How the innovation, in turn, appears to the audience is likely to have an impact on the eventual adoption decision.

Argument-based framing is one mode to communicate about an innovation. Another is the language-based use of innovation rhetoric. While framing serves to formulate substantive claims about the innovation, rhetoric is aimed directly at catching the audience's attention, at making the innovation appear in a certain light, and at influencing the audience's behaviour.

Edward F. McQuarrie and David Glen Mick argue that "when persuasion is the overriding goal, the rhetorical perspective suggests that the manner in which a statement is expressed may be more important than its propositional content."[61] Among the noise of professional discourses it might even be necessary to create some "over-attention" to new ideas.[62] Although based rather on anecdotal observations than on systematic analysis, literature on business communication has yielded a number of features that a new idea needs in order to be 'successful', these being: a radical break with previous concepts; an implied inevitability of the concept; coupling with existing

[60] Rogers, *Diffusion of innovations*, pp. 15-16.
[61] E. F. McQuarrie and D. G. Mick, "Figures of Rhetoric in Advertising Language," *Journal of Consumer Research* 22, no. 4 (1996): p. 424.
[62] D. Strang and M. W. Macy, "In Search of Excellence: Fads, Success Stories, and Adaptive Emulation," *American Journal of Sociology* 107, no. 1 (2001): p. 149.

norms of the audience; the citation of scientific evidence; a catching name; the fundamental text being a good read; and the identification of a credible individual to support the idea.[63] Van Lente claims that, in order to become accepted, "a forceful plea must be embedded in history, in a narrative of which the lines and lessons are recognisable and interpretable for the audience".[64]

Although a coherent, theory-derived or analysis-based set of rhetorical elements in the communication about innovations is lacking, nevertheless, it is possible to extract from these contributions three elements that complement the argument-based aspects of innovation discourses by language-based elements.

The first element is *attention*. A text, which is meant to sell a novel idea should, preferably, be interestingly written. It has been shown in consumer research that figurative language in advertisements is more memorable than literal language and therefore, we might expect to find figurative rhetorical devices in texts discussing innovations.[65] Such devices are, for example similes and metaphors, and in recent years, the use of (or, appearance of) metaphors has received attention in the fields of international relations and security studies.[66] Other possibilities of drawing attention to a text, for example, include the use of visualizations, or of an unexpected text form.

The second element concerns the new concept's *legitimacy*. The innovative concept might be compared to or put in line with previous successful or failed concepts (continuity). Alternatively, it might be depicted as a progressive or as an ill-advised break with the past (innovativeness). We can expect 'scientific', 'logic-based', or 'experience-based' statements on the concept's feasibility or non-feasibility (proving), including *matter-of-fact* and *conventional-wisdom* statements. Moreover, influential individuals such as successful military leaders might be listed as credentials either for or against the concept (references).

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[63] A. Kieser, "Mode & Mythen des Organisierens," *Die Betriebswirtschaft* 56, no. 1 (1996).
[64] H. van Lente, "Forceful futures: From promise to requirement," in *Contested futures: a sociology of prospective techno-science*, ed. N. Brown, B. Rappert, and A. Webster (Aldershot, England; Burlington, VT: Ashgate, 2000), p. 46.
[65] McQuarrie and Mick, "Figures of Rhetoric in Advertising Language."
[66] R. Hülsse and A. Spencer, "The metaphor of terror: terrorism studies and the constructivist turn," *Security Dialogue* 39, no. 6 (2008); P. Drulák, "Motion, container and equilibrium: metaphors in the discourse about European integration," *European Journal of International Relations* 12, no. 4 (2006).

The third element is the *call to action*. What is expected from the audience, and with what kind of justification? We might expect to find actual instructions on how to act. We might expect to find hypotheses about the impact of adoption/non adoption. Finally, we might expect to find statements of urgency or of inevitability.

The language-based elements in innovation discourses (attention, legitimacy, and call to action) complement the argument-based elements (relative advantage, compatibility, complexity, trialability, and observability). Taken together, argument-based innovation framing and language based innovation rhetoric form a framework, which offers a manageable research template for the analysis of innovation discourses (see figure 1). Using the integrated discourse framework as an aid, the following section will assess the debate about EBO.

Figure 1: An Integrated Discourse Framework

Argument-based **Innovation Framing**	**Language-based** **Innovation Rhetoric**
Relative advantage - Compatibility with the audience's values and needs - Complexity - Trialability - Observability	- Attention (literal and figurative speech, visualisations, text form, etc.) - Legitimacy (path creation, proving, referencing) - Call to Action (instructing, urging, creation of hypotheses)

Source: Compilation by the author

Structure and patterns of the EBO discourse

In this section, I demonstrate the viability of a discourse approach to understanding innovation processes. To this end, I present a content analysis of EBO texts with a view to the occurrence of argument-based and language-based innovation discourse elements. The assessment was based on an analysis of articles that appeared in the *Joint Force Quarterly* (JFQ) that mentioned or discussed EBO.

The JFQ is an official publication by the US military, in particular it is issued "in concert with ongoing education and research at National Defense University in support of the Secretary of Defense and the Chairman of the Joint Chiefs of Staff. JFQ is the Chairman's joint military and security studies journal designed to inform and educate national security professionals (…)".[67] For analysing the EBO debate JFQ was chosen over other military publications such as the *Military Review*, the *Air & Space Power Journal*, *Janes Defence Weekly*, and the *NATO Review,* because, firstly, it does not have a research agenda but publishes articles that discuss – among other subjects – current operational concepts like EBO that are adopted by the military or are considered for adoption. Secondly, the focus of the JFQ is not on service-specific matters but on subjects relevant to all military services. EBO had originated in the Air Force but for a brief period of time was considered a concept for all services. Thirdly, the plethora of authors to the JFQ are senior or high-ranking military personnel who can be considered knowledgeable insiders to the US military. Due to this status of the authors we can assume that military concepts discussed in the JFQ have already gained some momentum in the military community.

There is, however, a downside in choosing articles from a professional military journal like the JFQ for a discourse analysis instead of using primary sources like official documents, email correspondences, meeting minutes, etc. as the frequency of published articles might entail a selection bias on the part of the JFQ editorial board.

Despite this concern the JFQ was chosen ultimately as published articles signify a close approximation of the general EBO debate that took place within the joint US defence community. For the EBO discourse, the JFQ can be regarded as a correspondence medium reflecting (with the normal time lapse in publishing) the state of the EBO debate in the defence community.

The JFQ text analysis was structured by, and focussed on, the integrated discourse framework that has been introduced above. The following questions guided the assessment: How was EBO framed by the military expert community? What rhetorical styles have been used to present arguments for and against EBO? Was the

[67] See http://ndupress.ndu.edu/JFQ.aspx (accessed 6 April, 2019).

shift of institutional support for EBO reflected in the discourse? Is there evidence to suggest that the EBO discourse had an influence on the adoption and later discontinuation of EBO?

The Discourse Structure in the Joint Force Quarterly

EBO was discussed mainly by military professionals and by academic experts for military operations. In contrast to other concepts, such as cyber war, EBO did not receive much noteworthy attention from outside the military community, the exception being works in the fields of security studies[68] and military history[69]. These studies were, however, supposedly aimed not at influencing the professional EBO discourse but the academic discourse about military change.

In the JFQ the term "effects-based" appeared first in 1996. Between 1999 and 2015 it appeared at least once a year. The concept was mentioned frequently between 2004 and 2009.

Figure 2 Appearance of articles concerning EBO in the JFQ between 1996 and 2015

Overall number of articles mentioning EBO	70
Number of articles discussing EBO	60
Key texts dealing extensively with EBO	15
EBO appears in article headline	13

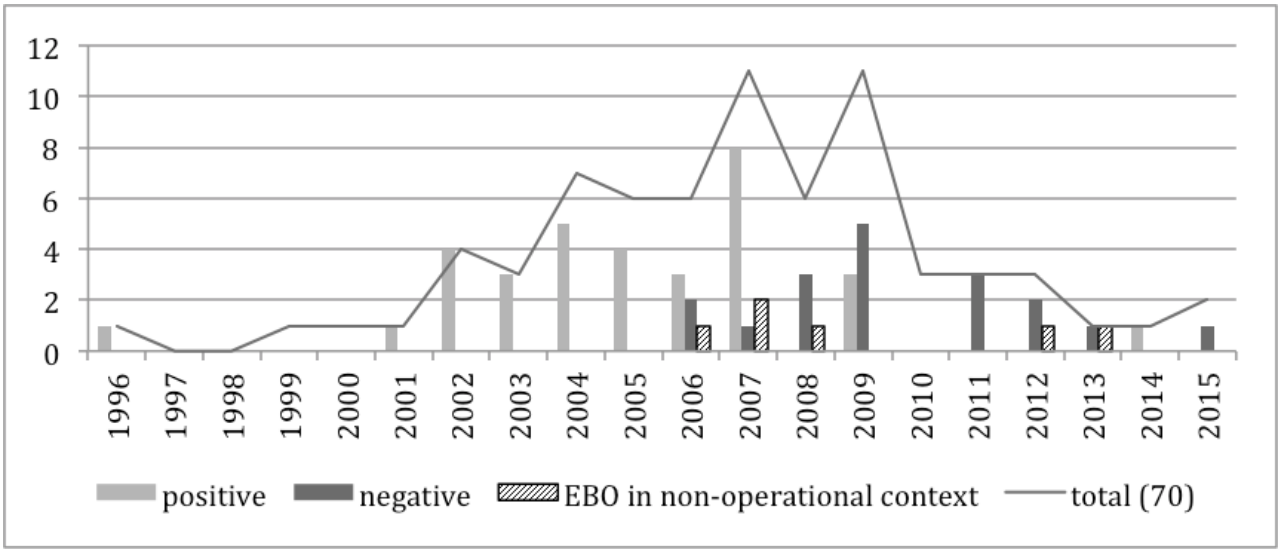
Source: Compilation by the author based on a content analysis of articles published in the Joint Force Quarterly

Of the 70 articles mentioning EBO that appeared between 1996 and 2015, 60 engaged in a discussion about EBO or voiced an opinion about the concept's worth for

[68] Terriff, Osinga, and Farrell, *A transformation gap?: American innovations and European military change*.
[69] P. S. Meilinger, "A history of effects-based air operations," *The Journal of Military History* 71, no. 1 (2007).

the military. Of those, 15 articles were identified as key texts that dealt extensively with EBO; 13 named EBO in their titles. Shown as a function of time, the distribution of articles mentioning EBO resembles a bell-shaped curve (figure 3).

Figure 3: Distribution of EBO articles in the JFQ (1996-2015)



Source: Graphical representation by the author based on a content analysis of articles published in the Joint Force Quarterly

An interesting aspect of the JFQ content analysis is the identification of uses of effects-based terminology in non-military contexts during the hey-day of EBO. Discussing how international law can be applied to cyber operations, Andrew C. Foltz – to give an example – talks about an effects-based approach as a way to base decisions about how to respond to a cyber attack on the grounds of damage produced by the attack, rather than on the (non-military) means used.[70] The use of the term – clearly not an everyday expression in the English language – in contexts that differ from military operations, for which the EBO concept was originally developed, can be regarded as a diffusion of the effects-based logic to other, non-military fields. It could serve as a sign

[70] A. C. Foltz, "Stuxnet, Schmitt analysis, and the cyber "Use-of-Force" debate," *Joint Force Quarterly*, no. 67 (2012).

of how strongly the EBO idea had permeated the security and defence community at that time.

Of the 60 articles that discussed EBO, 33 had an overall positive stance towards the concept. In 9 instances the concept was discussed neutrally, in the remaining 18 articles the authors rejected EBO. Along the timeline, articles with a positive attitude towards the concept preceded the bulk of articles with a negative stance. The turning point of the debate in 2007/2008 is clearly visible along the timeline. An actual EBO debate in which both proponents and opponents engaged in a discussion, making references to each other, took place between 2006 and 2009. Prior to that, no published article dealt with EBO in a negative light. Similarly, since 2009, the appearance of articles reflecting a positive attitude has been limited. Mattis announced EBO's abandonment in his 2008 memo at the height of the debate.

Who was speaking out in the debate? 33% of the discourse participants were senior military officers, 16% were civilian academics in military universities, and 12% were high-ranking officers. Although EBO was harnessed for joint operations and was widely discussed in the JFQ, it was originally a concept for the strategic use of air power, and this becomes apparent when relating the authors' attitudes towards EBO and their service affiliation. Expectedly, the bulk of EBO proponents were US Air Force officers (14 positive articles, 2 negative). EBO was positively discussed also by authors with a US Navy affiliation (4,1). While it is puzzling to see that Army officers supported EBO (9,3), it does not come as any surprise that authors with a Marine Corps affiliation were rather critical of the concept (0,2) considering their warrior-fighter military identity.

In conclusion, the shift of institutional support for EBO was indeed reflected in the frequency of articles debating the concept in a positive and negative light respectively.

Discourse Patterns in the Joint Force Quarterly

To varying degrees, all of the five elements of innovation framing were present in the wider EBO discourse that unfolded in the JFQ. Aspects of EBO's relative

advantage and its observability were, however, more frequently addressed by proponents and opponents alike than compatibility, complexity, and trialability.

Proponents and opponents invoked different images of EBO's relative advantage. This is notable as there was no real exchange of arguments but rather parallel statements of how EBO should be perceived. Proponents, to begin with, reiterated Deptula's original claim that EBO was an advancement from attrition-based annihilation warfare. Neither Mattis in his memorandum nor EBO opponents in the JFQ responded to that image. Neither did they refute the argument nor did they make a case in favour of an annihilation strategy. Instead, they contrasted EBO with the then novel counterinsurgency doctrine, thereby establishing a different dichotomy of a techno-centric effects-based approach to war versus a human-centric approach, the latter arguably much better resembling war's unpredictable and chaotic nature.[71]

Both, opponents and proponents also tried to gain interpretive authority when framing EBO's observability. Of the 15 key EBO texts in the JFQ, seven made explicit statements about the use of EBO in current operations. While proponents argued that EBO was successfully validated in recent military operations, opponents made a point to the contrary.

> Proponent view: "Organizations in Afghanistan and Iraq also were using aspects of EBO."[72]
>
> Opponent view: "As a single-minded approach, this concept is both unverified in confronting the evolving security environment and unproven in creating the conditions necessary for achieving policy objectives in the face of protracted intransigence—as the recent American and Israeli experiences in the Middle East aptly demonstrate."[73]

A third observation is the recurring use of the same illustrations selected to demonstrate the relative advantage. In his original publication, Deptula provided two examples from the Gulf War to underline the claim that EBO was advantageous in

[71] M. Vego, "Systems versus Classical Approach to Warfare," *Joint Force Quarterly* 51, no. 40-48 (2009).
[72] The Joint Warfare Center, "An effects-based approach. Refining how we think about joint operations," *Joint Force Quarterly*, no. 44 (2007).
[73] C. R. Davis, "Getting It Right. The Art of Strategy and Operational Warfare," *Joint Force Quarterly*, no. 48 (2008): p. 96.

terms of military efficiency. The first concerned the reduction under an effects-based paradigm of bombs needed to render useless, but not to destroy, the Iraqi air defences. A second example concerned attacking the Iraqi national electrical power grid in order to influence the population's determination to stand by Saddam Hussein.[74] These two examples echoed throughout the discourse. Not only were they restated time and again by Deptula himself and by others. There were also hardly any other examples used to exemplify what EBO was all about. This is interesting, as one would expect proponents to feed fresh examples into the debate to support EBO. Even EBO critics made use of Deptula's original examples.[75]

A forth observation concerns innovation rhetoric, which was used frequently by both sides, with attention creation and legitimacy being employed more often than calls to action. A number of observations stand out. To begin with, a kind of "EBO speak" emerged. For example, the phrase "(achieving) desired effects" and its variations appear 81 times in 12 of the 15 key EBO texts in the JFQ. Other examples include the use of the terms "nodes" (80 occurrences/8 texts), "system" (338/15), and "paradigm" (11/5) to describe or refer to EBO. Another powerful figure of speech is the "nature of war" (17/8) that was used in conjunction with EBO.

What is more, discourse participants not only referred to substantive comments of their discussion partners, they also used rhetorical figures, thereby spanning the gap between their positions on EBO. Consider these quotes:

> The staunchest opponents of effects-based thinking would have us throw the baby (EBO) out with the bathwater just as we are starting to get it clean. Some of its more wild-eyed advocates would have us throw out the washbasin (operational art and the principles of war) instead.[76]
>
> There was no baby in the bathwater.[77]
>
> Further development and improvement of effects-based operations will help prevent our military from throwing our combat-proven baby out with the bathwater.[78]

[74] Deptula, *Effects-Based Operations: Change In the Nature of Warfare*, pp. 10-11.
[75] P. K. Van Riper, "EBO. There was no baby in the bathwater," *Joint Force Quarterly*, no. 52 (2009).
[76] J. B. Ellsworth, "Letters to the editor," *Joint Force Quarterly,* no. 42 (2006).
[77] P. K. Van Riper, "EBO. There was no baby in the bathwater," *Joint Force Quarterly*, no. 52 (2009).

> So let's not throw out the baby with the bathwater and return to attritional models of thinking.[79]

In addition, authors used similes and metaphorical expressions immensely to refer to EBO's expected impact and to its substantive contents. Interestingly, texts with a positive stance on EBO used metaphors for EBO's impact more than twice as often as opponents did. Consider the following examples of positive and negative similes and metaphors from various texts in the JFQ regarding EBO's impact:

> Collected proponent statements: EBO is … a new paradigm, new thinking, the way of the future, an emerging strategy, a paradigm shift, an emerging trend in the American way of war, a change in the nature of military operations, the future, supremacy.
>
> Collected opponent statements: EBO is … (distorting) the nature of war, a negative impact on joint warfighting, a mania, a mantra, a craze.

The frequency of occurrences is reversed when it comes to describing the substantive features of EBO:

> Proponent statements: EBO is … a visionary form of warfare, approach, a culture, an emerging/evolving concept, clarifying the essence of strategic attack, resembling Blitzkrieg, transparent, a concept, looking at things from a different perspective, a construct for operations, a framework.
>
> Opponent statements: EBO is … the antithesis of operational thinking and practice, unproven, not backed by empirical evidence, neo-Newtonian – not Clausewitzian view of the nature of war, resting on faulty foundations, shotgun marriage of Clausewitz' "centre-of-gravity" theory and the "enemy-as-a-system" concept, a single-minded approach, running contrary to historical lessons and the fundamental nature of war, fundamentally flawed, an intellectual "Maginot Line", a distraction, pseudoscientific, an ideal bumper-sticker for domino warfare adherents, an oxymoron, deterministic.

[78] P. M. Carpenter and W. F. Andrews, "Effects-based operations. Combat proven," *Joint Force Quarterly,* p. 81.
[79] S. D. Chiabotti, "Letters to the editor," *Joint Force Quarterly,* p. 12.

The most remarkable use of a simile is made by an EBO opponent who compares EBO to torture: "Although not typically associated with effects-based operations, the US military's flirtation with so-called enhanced interrogation techniques involved the same behaviorist, deterministic, and effects-based mindset."[80]

A fifth observation is that, despite the frequent use of illustrations and photographs in the texts, no iconic picture symbolizing or depicting EBO, and which would be used recurrently, emerged in the debate.

With regard to legitimacy, there is, sixthly, a tendency of EBO proponents to put EBO into a wider historic framework and claim that EBO "have been practiced for centuries"[81]. Indeed, this path creation appeared moderately in JFQ articles. Proving in the way of matter-of-fact statements was also moderately used. Milan Vego, for example, argues against EBO by making the broad claim that, "human activity is so complex that it operates outside the physical domain".[82]

Significantly higher were the occurrences of referencing military theorists and professionals to promote or demote EBO. For example, 38 references to military theorist Carl von Clausewitz were made in 5 key EBO texts. Mirroring the defence-wide narrative of EBO, the concept was, also in the JFQ, more often attributed to well-known air-power theorist Warden than to the lesser-known Deptula, the actual inventor of EBO. Another striking feature in this regard is the moderate use of referencing in combination with credibility as combat-experience. Consider these quotes and how they put General Mattis and thus the decision to end EBO in the joint military forces in a different light respectively:

> EBO proponent statement: "General Mattis thinks like an infantryman. For the infantry, the basis of military power is taking and holding ground. (…) While the range of artillery has increased over the past 200 years, the big guns seldom fire farther than a man can walk in a day – hence the

[80] P. D. Fromm, D. A. Pryer, and K. R. Cutright, "War is a moral force. Designing a more viable strategy for the information age," *Joint Force Quarterly*, no. 64 (2012): p. 46.
[81] M. L. McGinnis, "A deployable joint headquarters for the NATO Response Force," *Joint Force Quarterly*, no. 38 (2005): p. 62.
[82] M. Vego, "Systems versus Classical Approach to Warfare," *Joint Force Quarterly*, no. 52 (2009): p. 42.

> tactical symbiosis of artillery and infantry and their aversion for targeting at the operational and strategic levels of war."[83]
>
> EBO opponent statement: "General Mattis and the many senior officers in his corner – all tested in the crucible of battle – have done our nation a great service, righting an intellectual vessel that was on its way to drowning real."[84]

In conclusion, the analysis of EBO discourse patterns revealed proponents and opponent produced similar patterns in their respective use of innovation framing and innovation rhetoric.

How was EBO framed by the military expert community? In terms of the overall use of innovation framing by both groups, arguments that emphasized compatibility with audience values, trialability or complexity were made less frequently. Instead, discourse participants framed EBO mostly in light of its relative (dis-)advantage and stressed successful or unsuccessful demonstration in military operations, most frequently in the Gulf War 1991. Opponents challenged EBO by focusing on the two frames that have been emphasized by proponents: firstly, they planted doubts about EBO's successfulness in operations quoted by proponents and presented counter narratives about EBO failures in other operations. Secondly, opponents largely omitted reproducing the chasm between an attrition-based and an effects-based way of war, as created by proponents. Instead, opponents offered a very different interpretation of the strategic reality in which the armed forces operate and hence generated a different chasm between a technology-dependent and a human-focused approach to war.

What rhetoric styles have been used to present arguments for and against EBO? Where innovation rhetoric is concerned, it appears that participants engaged rather in raising attention for EBO and in creating legitimacy for their respective line of argumentation than in attempting to make direct calls to action. Despite substantive differences, in terms of the occurrence of discourse elements the EBO discourse was rather homogenous.

[83] S. D. Chiabotti, "Letters to the editor," p. 11.
[84] P. K. Van Riper, "EBO. There was no baby in the bathwater," p. 85.

Conclusion

The previous sections has shown, that the analysis of the EBO discourse in the JFQ produced descriptive knowledge to confidently answer the questions of how EBO was framed by the military expert community, what rhetorical styles had been used to present arguments for and against EBO, and if the shift of institutional support for EBO was reflected in the discourse. The more ambitious question to be approached below, however, is whether the EBO discourse had an influence on the EBO innovation decisions.

How would established military innovation approaches explain the rise and fall of EBO? The conceivably strongest conventional argument would say that the nature of the strategic environment and national security preferences that initially sponsored the adoption of EBO had shifted around the year 2008 rendering EBO unfit. But the question is whether the nature of the strategic environment can be ascertained 'objectively' or if the concept of strategic environment is not in itself a social construct through communicative acts. From the latter perspective, for a time EBO fitted the then dominant understanding of actors about the security environment. When the dominant view changed so changed the perception of EBO. And indeed, discourse analysis could show that the once authoritative interpretation of EBO by the binary code 'victory through annihilation'/'victory through effects' was replaced by 'victory through effects'/'victory through presence'.

Another strong explanation of military innovation processes is organizational culture. One could argue that fractions of the US armed forces, namely the US Army and the US Marine Corps opposed technology-based EBO that appeared incompatible with fighter-warrior identify of the US Marine Corps [85] and the territory-based task perception of the US Army. But such cultural frames of the military services had existed before the adoption and discontinuation of EBO in 2001 and 2008 respectively and can, therefore, not sufficiently explain the end of the concept. From an institutionalist view point one could argue, furthermore, that the US Marine Corps opposed EBO as it would

[85] T. Terriff, "Innovate or die: Organizational culture and the origins of maneuver warfare in the United States Marine Corps," *Journal of Strategic Studies* 29, no. 3 (2006).

have diminished its role in joint operations. But again, this would not fully explain the timing of the shift in 2008.

Without attempting to establish a hard scientific-positivist explanation as to why EBO failed ultimately, a discourse view as it was offered in this article helps to broaden the understanding of communication as a soft factor that may impact on the outcome of a military adoption decision. One important aspect in the case of EBO was a homogeneousness of the discourse that is not known in other debates about military concepts.

Opponents and proponents framed EBO substantively differently but at the same time homogenously by referring to the same elements, i.e. relative advantage and observability. In addition, they used a very similar rhetoric.

Other military discourses, in contrast, are not as homogenous, and we can assume, that because of that those discourses hardly reach the stage of closure that appeared in the case of EBO. In the current discourse about combat drones, to give an example, it appears that proponents of the use of unmanned aerial vehicles almost exclusively stress the relative advantage of drones whereas opponents almost exclusively emphasize the lack of compliance with audience norms by focussing on the legally problematic practice of targeted killings.[86] When speaking about combat drones, proponents and opponents often do not really exchange arguments as statements on military efficiency are not backed or refuted by the statements of the legal implications of drone deployment.[87] As a result of the drone innovation discourse spanning different framing elements, the argument for or against combat drones cannot be 'won' by either opponents or proponents. In the case of EBO, however, opponents apparently made convincing counter-arguments within the two frames originally emphasised by proponents: relative advantage and observability. By this, we can assume, they 'won' the argument, which helped to strengthen those circles in the armed forces that campaigned for alternative concepts such as counterinsurgency and for an end of EBO.

[86] I. Wiesner, "UAV for R2P? : Exploring the effectiveness and legitimacy of drones," in *Precision strike warfare and international intervention: strategic, ethico-legal and decisional implications*, ed. M. Aaronson, et al. (London; New York: Routledge, 2015).
[87] Ibid., p. 152.

One can speculate about the effects of homogeneity in military innovation discourses on decisions to adopt or discontinue a novel military technology or concept. One interpretation offered here is that the dominating view of an innovation is dependent on the dominating views in one or more of the five innovation frames. In the case of EBO, proponents and opponents competed for dominance within the same two frames. Once the view shifted from positive to negative in both frames, the overall picture of EBO as well shifted from positive to negative thereby opening windows of opportunity to abandon EBO. Presumably, this shift resulted in the withdrawal of institutional support for EBO. We can assume that in prolonged discourses that are less homogenous this kind of shift hardly ever happens. In the case of combat drones, proponents and opponents dominate very different frames (relative advantage vs. compatibility with norms) keeping the debates alive and thus preventing the closure of this contested discourse.

Further comparative research is necessary to constitute the proposed correlation between military innovation discourse patterns and the success or failure of a military innovation. Process-tracing, furthermore, could produce inferences about causal links between military discourses and innovation decisions. An analysis of officers attitudes towards military innovations at different points in time could support such a research avenue.

To conclude, the analysis presented in this article has added to our understanding about communication processes prior to the decision to adopt (or discontinue) an innovation. It has put an emphasis on discourse patterns. I argued that innovation discourse patterns influence the course of the respective military innovation. In the case of EBO this pattern was homogenous, which might be linked to the concept's discontinuation. By focussing on discourse patterns the level of innovation diffusion analysis is elevated from the particular pro and contra arguments in a military innovation discourse to the innovation frames they fall into. This perspective paves the way for future comparative research to establish more rigorous statements about the influence of innovation communication on military adoption.

A discourse view might not be sufficient fully to explain instances of military innovation adoption and discontinuance. Likewise, commercial advertisement is not sufficient fully to explain a buying decision. Yet, how an innovative concept is

substantively and rhetorically framed most likely has an influence on its *perception* by those military and political actors who ultimately take innovation decisions. By that military discourses are not just representations of 'hard' adoption factors but they are an adoption factor in their own right. Therefore, military innovation studies should start to pay attention to the discursive production conditions of military innovations.

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