# The Emergent Art of Military Design

## Swedish Armed Forces and the Contemporary Security Environment

*by Ben Zweibelson, Lars Hedström, Magnus Lindström and Ulrica Pettersson*[1]

> "In the light of the latter motives for doctrine it also becomes clear why the new situation of the Swedish Armed Forces provides a new role for doctrine. A new situation must be analysed, new knowledge disseminated and new policies must be made."
>
> *Johan Lagerlöf and Krister Pallin*[2]

> "Sweden and its Armed Forces face new, and to some extent, unknown threats and challenges that might be identified too late. New methods and cooperative partnerships are in need of being developed to appreciate and act in this partly "reinvented", but surely complex, security policy situation. A situation that presents both external and internal threats that are not always possible to distinguish from each other. Functioning within this multi-faceted and complex security environment should include an ongoing appreciation of the situation, defining of the problem(s), deciding who needs to act, and most importantly, a full comprehension of the consequences (intended or otherwise) that one's actions may have. Design Thinking is a method, which has been proven to assist in offering answers to the many questions facing a decision maker tasked with managing complex problems. It has been used successfully in other countries, and should likewise be easy to adopt and implement by the Swedish authorities as well."
>
> *Major General Urban Molin, COM SWE SOCOM*[3]

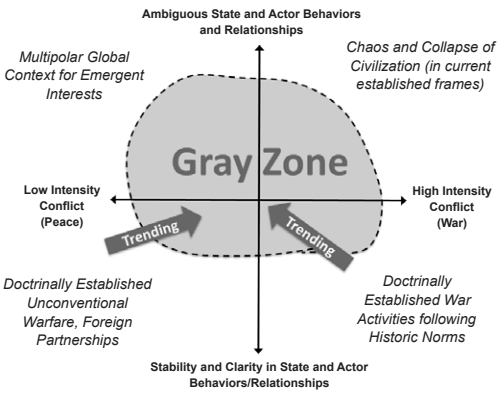
**Resumé**

Artikeln beskriver '*Military' Design Thinking* från det perspektiv som lärs ut vid US Special Operations Command's Joint Special Operations University (USSOCOM JSOU). Ambitionen är att besvara följande frågor: Vad är *Design Thinking* och vad är ursprunget till metodiken? Varför är *Design Thinking* aktuellt idag, och hur kan beslutsfattare nyttja metoden för att påverka komplexa problem? Vidare ger författarna förslag på hur *Design Thinking* kan nyttjas i ett svenskt sammanhang för att påverka de komplexa säkerhetsutmaningar som Sverige står inför. Sammanfattningsvis beskrivs *Design Thinking* dels som ett förhållningssätt, men också som en metodik vilken ökar en militär beslutsfattares möjlighet att förstå sig på (appreciate) komplexa problem. Denna fördjupade förståelse ligger sedan till grund för chefens inriktning av verksamhet. *Design Thinking* ersätter inte dagens metoder men möjliggör att "rätt" problem identifieras och löses.

OVER THE PAST few decades, the international military community has incorporated a multi-disciplinary approach that breaks from traditional and largely mechanistic decision-making methodologies of the Industrial Era.[4] Military academics continue to apply a multitude of terms here for this paradigm shift in war, including 'post-industrial', 'post-modern', 'competition short of Armed Conflict' and 'gray zone' to name just a few of the current buzz words.[5] While 'gray zone' implies a continuation of physics-based (visual spectrum of light) metaphors with military endeavors in complexity, the group of terms that 'gray zone' is associated with nonetheless attempts to break from some of the previous strategy, doctrine and institutional frames.

Figure 1 illustrates this emergent framework of increasingly ambiguous and ill-defined context where war and peace become blurred, and the once-clarified alliances of nations and actors are absent. Further, these 'gray zone' contexts defy established military doctrine as well as historic patterns, with a trend of more conflicts moving away from contexts that previously gave significant advantage to centralized defense organizations, approved state forms and function, and broadly approved war behaviors. Most significantly for defense organizations, the previously successful (and dominant) analytical approach to decision-making and problem solving is no longer as valuable for strategy, planning, or shaping organizations for security applications.

To answer this novel and increasingly sophisticated challenge, security institutions have looked towards using military design thinking as a complementary process to the analytical decision-making model. A blend of complexity theory, alternative managerial theory (change management), instructional design, and post-modern philosophy forms a fluid and dynamic context for the 21st century military practitioner.[6] While the traditional military establishment initially resisted this paradigm shift towards a more fluid and normative (how the military ought to perform within complex adaptive conflicts) warfare methodologies, by 2016 multiple militaries have incorporated or expanded professional education, doctrine, and research into military design thinking.[7]




The Swedish Armed Forces, as a non-NATO member operating within the European context of a shifting and transformative post-Cold War Era have already gone through major revisions, doctrinal transformation, and mission realignment within this dynamic and uncertain period. Interestingly, military historians might offer that most nations including Sweden after the fall of the Berlin Wall began a major reduction in forces along with a foreign policy tilt towards peacekeeping and activities "far from home". However, the world is in the midst of an opposite turbulent shift where Armed Forces are focusing "close to home" as well as towards hybrid threats that combine conventional, unconventional, and emergent (novel) war strategies. In a December 2016 analysis,[8] the Swedish Armed Forces defined four central

conditions that highlight why the Armed Forces need further development:

- Russia's plan to increase its military capability after 2020 will occur at the same time Swedish Armed Forces may see a decrease in their own capability due to the trending defence policy and economic conditions.
- The Baltic Sea's operational environment is assessed to experience a change after 2025, in which the aim, scope, and characterization of potential aggressors will have shifted from what nations may see today.
- It is highly likely that Sweden will be affected by an armed conflict in the Baltic Sea region.
- Hybrid warfare is aimed at societies as a whole, and the society's vulnerability to pressure is increasing.[9]

Emergent uncertainties are further described by the Swedish Armed Forces in an analysis presented to the Swedish Ministry of Defence in March 2017.[10] These uncertainties will continue to pose threats, and possible rivals might seek vulnerabilities to exploit across this wide spectrum that might be termed 'war of the possible'. Sweden has the opportunity to implement military design thinking into a uniquely Swedish adaptation for the Swedish Armed Forces. This should occur framed in the context of Swedish national defense and the 'Total Defence Concept' through civil-military design thinking for national security. The design applications would complement and enable associated security planning, albeit in novel and creative ways for these complex adaptive security contexts.

The Swedish adaptation of design thinking will enable long-term military cultural transformation as well as create the necessary conditions for critical innovation in various clients such as the Swedish Armed Forces and the Swedish Civil Contingencies Agency[11] coordinating the civil defense actors. This article presents a brief history of the international military design movement, how Sweden's unique context could apply design thinking, and how the Swedish Armed Forces might apply design thinking. Integrating design into a military institution is not as easy as publishing a new policy paper or new doctrine for the force to incorporate. Design is an entirely different process, with different language, concepts, and processes that typically challenge and even conflict with established military analytic-based methodologies for strategy and planning.[12]

## Explaining Military Design: Critical Self-Awareness through Conflict Drift

Military historians, theorists and sociologists attempt to frame human organized conflict in various schemas, paradigms, or periods dependent on many variables and logical methods. Some have used the terms 'pre-industrial, industrial, and post-industrial' while others such as Antoine Bousquet have offered useful metaphoric frames such as 'mechanical, combustion, nuclear, information' periods of war. We combine doctrinal framing from military historian Markus Mader with some design influences from military theorists such as Shimon Naveh, Aaron Jackson, Christopher Paparone and others to compose *Figure 1*.[13] Mader saw the beginning of the military modern doctrinal age occurring in the late 1600s when Europe first began producing formal military doctrine and educating military professionals in set academies. This quickly spread across the globe, and by the 1990s this Industrial Era approach to war through engineering,

science, reductionism, and hierarchical command and control was prevalent in most western and non-western societies.[14] Yet even in modernist conflicts, many of the classical or 'pre-Industrial' elements, language and processes of earlier warfare remained observable and interrelated in modern war. This process continues with what we authors promote as the dawn of design, termed the 'Post-Modern Military' movement.

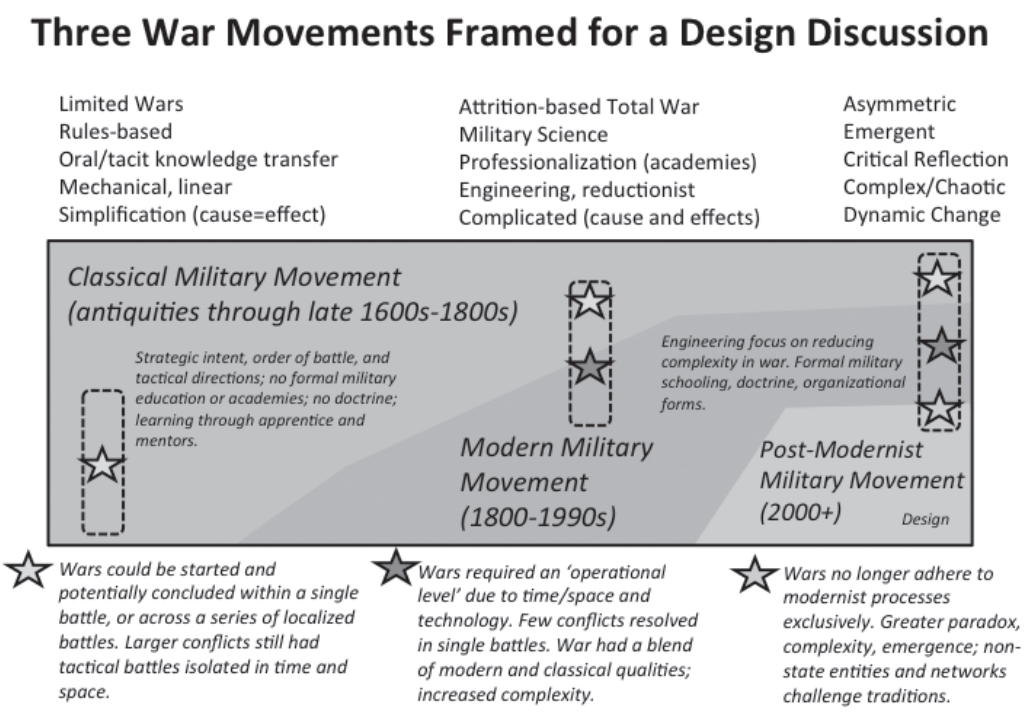
Applying 'post-modern' to the military is challenging, as it is unsettling to military professionals due to the association of post-modern thought with decidedly non-military topics and ideas. Post-modernists as well would object to this, as even the application of 'post-modern' to anything that is not immediately deconstructed or organizationally challenged might be a misapplication of the term for them. However, for design to be considered holistically across the entire spectrum of organized human conflict and security, one must include many of the traditional, classical, and ritualized military processes. Design thus requires ample freedom for many military concepts from seemingly incompatible or paradoxical disciplines and perspectives to be applied in unexpected ways. Postmodernists likely will find this appealing, while military doctrine writers will probably feel frustrated. Military design thinking employs a rich and ever-expanding range of theories, dependent upon new contexts and applications for their experimentation and development.

One significant theory for design thinking is of sociologist Donald Schon's 'displacement of concepts' where humanity gains new ideas and knowledge while displacing many interconnected elements of language through metaphor into new associations. Thus, Figure 1 illustrates a displacement of the concept of war, where earlier classical concepts blend and transform with a displacement into modernized concepts. Those modernized concepts, albeit still intertwined with classical concepts, displace and transform in the 21st century towards a post-modern concept of war.

To address general examples of military displacement of concepts, consider the popular terms 'flash mob', something 'going viral', or things with the term 'cyber-'attached to them. In the post-modern war movement, militaries might face 'mobs' that can be addressed in classical as well as modernist strategies and techniques, but 'flash mobs' set within social media manifest decidedly different and even paradoxical concepts. Here, the change in meaning causes new language, new metaphors, and the need for organizational learning through novel concepts. Flash mobs require different cognitive tools, new ways for an Armed Force to identify problems, make decisions, employ strategies, and arrange tactical application in time and space. While the Swedish Armed Forces may not have particular concerns over mobs, this new development of 'flash mobs' may require a different military perspective. The same might be applied to something 'going viral' instead of traditional virus contamination concerns, as well as the difference between cybercrimes and tangible crimes occurring entirely within the physical world. One is not identical to the other, and both require different security considerations, approach and mind-set as well as processes for an Armed Force to frame ideas towards deliberate actions. This is where design becomes essential in complex adaptive environments.

Figure 2 establishes the basic frame for why design matters to Armed Forces today, and why existing classical and modernist military processes (such as e.g. NATO Decision-Making, JOPP and MDMP) in themselves are no longer sufficient in emergent conflict environments. Today's increasingly complex

Figure 2: Framing Pre-Industrial, Industrial, and Post-Industrial Frames for War




security matters are no longer effectively dealt with using earlier decision-making and problem-solving approaches alone. The rise of new technology, social media, globalization, and rapid information exchange requires new and additional cognitive tools that can do more. Military design first emerged as an international military movement in the 1990s through the intersection of several overlapping non-military fields and the inquisitive experimentation of several instrumental military pioneers.[15] Design, as a multi-disciplinary concept for normative approaches to human decision-making, emphasizes 'what is possible' and 'how a military ought to function' instead of a highly descriptive and conforming model (termed 'positivism' by Jackson, Paparone and other theorists) where militaries seek to predict future system behavior through past experiences, reductionism, and mechanistic logic.[16] The positivist approach largely encapsulates traditional military strategy making, campaign design, and linear decision-making processes (such as the NATO Defense Planning Process and Allied variations).[17] When considering military positivist processes, one may look to most military activities framed within the modernist movement from the late 1600s through the 1990s, although all models are approximations and there are always noted exceptions in war.

Design thinking features extensive emphasis on critical thinking at the meta-level (thinking about the topic in broad, holistic ways) where one considers the organizational form, logic for interpreting the world, limits of one's own organizational frame, and how

other key stakeholders within a complex adaptive system might interpret things differently.[18] This occurs within an understood contextually unique and fluid environment, where even as a designer considers the system, the system continues to change. Design requires many different perspectives, and the freedom to explore new combinations of military theory and practice across multiple domains, disciplines and fields. Here, a military organization that only reflects on war theory is ill equipped. To only consider different methodologies without moving towards 'why an organization chooses said methodology...and why that is' requires moving beyond institutionalized limits of critical reflection.

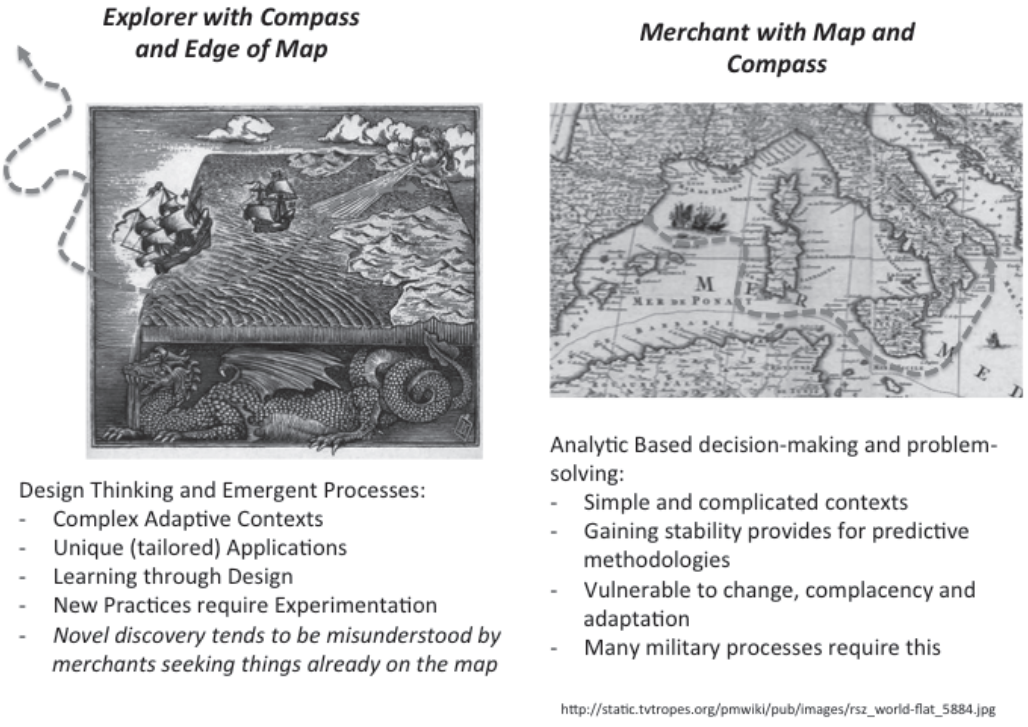
Design provides a military organization the ability to theorize about "how one theorizes on war theories", or to become as Sociologist Karl Weick terms a 'reflective practitioner' in warfare and organizational change. Design operates within a new era where the Information Age challenges the institutional norms of the Industrial Era; social media, cyberspace, globalization, and international or intercontinental networks of diverse stakeholders vie for abilities that once were only attainable by nation states. In this emergence, new system behaviors unfold in surprising and non-linear ways, often conflicting with traditional and experience-based military processes.[19] To explain this in another perspective, we offer a metaphor to enable our own displacement of concepts on war and design.

Consider how merchant ships in Medieval Europe might travel from a known port to another well-established destination, using maps and tools that ensure a highly predictable and reliable journey. Now consider explorers, and how at some point in their journeys into strange new lands, their maps became useless; they had reached the edge of the map and now were drawing their own new one. Design is akin to making new maps while exploring for your organization, increasing aspects of risk (or 'prototyping' in civilian design models such as AGILE, ADDIE, and others), experimentation, discovery, and innovation. For both the merchant shippers and the map-less explorers, both experienced 'drift' in that despite the best of intentions and preparation, complex systems operate in non-linear and emergent ways.[20] We 'drift' in that the objectivity we assign to many artifacts and processes within reality still have subjective aspects to them, and as social beings our realities are in many ways socially constructed with drift included.[21]

Military organizations seek out design thinking to help them deal with contexts where traditional linear methodologies are no longer giving the needed answers. Or when exploration is necessary, so that 'new maps might be created' to help to navigate in unfamiliar water, such as in the gray zone. Design will provide Commanders with an alternative in order to give adequate guidance for shaping their intent and continuously direct the planning process. As past explorers set sail searching for a new route to India to solve one problem, they instead discovered America and generated entirely new opportunities as well as new problems that required a new frame to comprehend. The collapse of the Berlin Wall became, in some ways, an example of many nations moving from a seemingly stable 'bi-polar superpower balanced world' towards a conflict environment demanding a new frame.

Sweden emerged from the Cold War Era in unfamiliar territory, and over the past fifteen years has plotted various military courses through international peacekeeping, Allied peace enforcement and security support endeavors, and environmental challenges due

Figure 3: A Metaphor for Emergent Practice and Design




to economic, resource, and political influences. Today, with recent activities of a newly inspired Russia in Europe, the Middle East, and through cyberspace, Sweden has found itself again in uncharted waters where new emergent (even never-before-seen) threats and complex social problems have materialized.[22] Attempting to solve new problems with solutions set within an outdated frame is an example of a military not acknowledging the displacement of concepts into something requiring innovation and new thinking. In the context of our metaphor, explorers attempting to re-draw existing maps of India to match their discovery of America will never frame reality with the addition of a new continent, if they insist they reached India as they original planned.

## The 21st Century Military Design Movement: International Emergence

Military design first developed through the groundbreaking theoretical work of Israeli military theorist Shimon Naveh through what he termed 'Systemic Operational Design' or SOD.[23] While Naveh's multi-disciplinary approach sampled from complexity theory, architectural design, post-modern philosophy, and organizational theory, the densely poetic and academic language of early Israeli SOD became a detriment to multiple military design education efforts in Israel and the United States.[24] Naveh's original design concepts were inspiring, yet military organizations

struggled over how to indoctrinate them, educate the force, and apply in some relationship with existing traditional planning. However, the core concepts of Naveh's work generated tremendous interest and study, and over time American, Australian, and Canadian militaries took on their own design methodologies that reflected qualities and rituals of the adapting institution.[25]

By the mid-decade of the new millennium, the U.S. Army implemented design thinking into its doctrine as well as professional military education at the U.S. Army School of Advanced Military Studies.[26] The Australian Army, taking a slightly different approach, established 'Adaptive Campaigning' in their operational design construct, while the Canadian Forces College in Toronto began blending various military design concepts with civilian-based instructional design for a mixed-methods pedagogic approach.[27] Since 2014, faculty at the Polish National Defense University at Warsaw has published design concepts for military consideration as well as the Royal Netherlands Defense Forces through the Land Warfare Centre and a Hague-based government Think Tank.[28] The Canadian military expanded their design education across field-grade and senior leadership programs, also hosting advanced military hybrid warfare and design workshops.[29] Meanwhile, a rise in doctoral dissertations focusing on design thinking and postmodern military concepts can be found from Oslo to Canberra.[30] The U.S. Air War College will implement advanced design education in their January 2017 syllabus, signifying an expansion of design into all primary areas of U.S. professional military education.[31] For the international military, design as a movement is rapidly expanding across multiple Armed Forces and defense ministries.

## Swedish Advantage and Challenges: Size, Speed, Scope and Culture

In contrast to the United States, Sweden is a small European nation with a very different geopolitical situation and historical setting. Located in Northern Europe with long borders along the Baltic Sea, Sweden finds itself essentially surrounded by geopolitical tensions and rapid developments in this post-Cold War Era of new conflict. Most significantly, Russia in the past decade has dramatically changed its behavior, becoming more provocative in the Baltic Sea region and Eastern Europe.[32] Moscow has also increased international tensions not only with the nations in the area but also with Washington, the remaining global superpower and international military juggernaut. The concept of 'territorial defence' continues to re-surface on the security agenda in Sweden as well as among numerous small European nations within proximity to this new aggressive Russia. Recent security and defense activities within Georgia and Ukraine provide the Swedish population valid examples of this emergent threat.

Sweden now, after the simultaneous rise of the new Russia and the emergence of massive global transformations in information, social networks, and technology must revisit traditional national security and military strategies. "For the first time in decades, these effected states have to consider military actions in their "strategic near abroad" instead of international contexts such as Iraq and Afghanistan."[33] This requires not only new policies and defense initiatives, but also novel ways of thinking about war and defense strategy innovation. Sweden could re-establish the Total Defense concept within a new threat environment so that military design thinking supports the joint military-

civilian strategic planning process, as well as an emergent strategy. This hybrid approach will provide new ways of thinking and improved operational capability to meet these adaptive "gray zone" threats.

Another key issue closely related to Sweden's territorial defence and security agenda is the rapid emergence of cyber threats. Cyber-attacks represent not just a new domain for conflict (or actions short of war) but a strange and fluid process of offensive and defense activities that are blurring all 'modern' warfare definitions beyond their breaking points. Cyber is already widely discussed, yet much of the international defense discussion still orbits established and highly traditional military methodologies and constructs for problem solving. There seems to be a wide pallet of 'new' challenges that distort formal foreign policy decisions for nation states, such as in the case of Russia's annexation of Ukrainian Crimea.[34] War itself might become an obsolete concept, in that this new "gray zone" of cyber and human domain actions might constitute shades of conflict that our traditional lenses are unable to distinguish.[35] Our militaries require new lenses and filters, thus the design movement is making waves across military academia as well as within Armed Forces through experimentation and reflection.

On top of potentially aggressive neighbors and the growing sprawl of novel threats in the human and cyber domains, Sweden has for the two last years been part of the Nordic group of nations (as well as European) that must deal an emergent refugee crisis. Although traditionally the Swedish Armed Forces will not deal with certain crises, in this new complex and emergent security environment many of the non-military phenomenon seem to be linked in complex and non-linear ways with those that are decidedly in the purview of an Armed Forces. Things have become blurred, and cause and effect cannot be spelled out for categorization to the proper agency or authority. Therefore, all civil agencies need to work together with each other and the Armed Forces. The Swedish Armed Forces have recently published a handbook for cooperation with civil agencies.[36] Additionally, the Chief of Armed Forces and the Civil Contingencies Agency's Director General recently launched a Joint Strategic Planning Procedure for the Total Defense. These doctrinal developments reflect a new need for Swedish 'whole-of-government' thinking and problem solving that addresses complexity in ways that previous traditional and compartmentalized structures are now unable to solve.

Conflicts are not only borderless but become fluid and nonlinear across social, cyber, and other mediums which makes it difficult or even impossible to separate external and internal threats in a small nation as Sweden. Sweden is not alone, however each nation including Sweden must make important decisions on how to proceed. This includes the development of new theories, tools, and education such as military design thinking. Sweden needs to implement an organizational transformation towards an Armed Force and security apparatus able to think more critically and creatively within highly complex conditions. Design thinking may be considered the new 'glue' that bind together approaches across various agencies for security, governance, and law enforcement.

There are several conditions and circumstances that affect a small state security perspective in comparison to states with extensive military powers and capabilities. Sweden will not be able to simply copy whatever developments a larger military might be doing (such as simply copying another military's take on design thinking), without considering the need for customization and acknowledgement of necessary cultural and geopolitical considerations. "Small states

possess modest political (and military) ambition and power in the realm of international relations. Therefore, it is widely argued the strategic incentives for small states to seek cooperation and alliances for increased security are different for that of larger more influential states with substantial military powers."[37] Armed Forces within various collaborations and partnerships need to incorporate new ways of thinking as well as diverse perspectives on complex adaptive issues. Design thinking offers an organization those necessary tools as well as the opportunity for innovation. Design challenges traditional as well as assumed frames, thus the 'post-modern' aspect of creation accompanied by destruction is both relevant and essential.

Is it then possible to understand all the threats, internal as well as external? Can strategists and policy makers understand how they might connect and impact the actual nation's security situation today and in the future? While modernist military perspectives will often continue to argue 'yes' if given enough time, information and technology, that remains a reductionist and mechanistic dream from the era of modern warfare. We argue it is impossible to understand the entire picture within globalization in connection with this new post-modern security context, however there are tools and methods that can help to appreciate the situation. At best, the game becomes one of maintaining security relevance in constantly emerging contexts while seeking to exploit short-term advantages against rivals as well as emerging threats. There may no longer be any finish line or true victory declaration, while the many destinations for failure continue to expand in unexpected ways.

The Swedish Armed Forces like other Anglo-Saxon militaries apply quite a number of 'buzz words' in professional military debate and discussion. Definitions such as "adaptive", "agile", "dynamic" are frequently used for reasons why a military must innovate against new and dangerous threats. Other terms such as 'non-linear', 'complex', and 'nonconventional' echo similar concerns of uncertainty and unpredictability. As military language changes over time in practice as well as doctrine and policy, the words used reflect how that organization perceives reality. Due to the unpredictable and unstable complexity of today's dynamic security environment, militaries are demonstrating confusion as well as an inability to articulate these fluid contexts. Militaries attempt to reduce risk, increase convergence, and generate uniformity as well as reliability within difficult conflict conditions, thus the changing nature of war, conflict short of war, and these new 'gray zones' of blurred security concerns in the 21st century is particularly alarming for traditionalists seeking the stability of earlier Cold War period security matters.

However, if taken at a holistic level, what is really happening here is that our militaries are struggling to handle wicked problems.[38] Wicked problems are those sort of conflict situations that refuse to behave according to previously useful rules, and any effort to "solve" the problem results in an even more radical development with messier consequences. The current state of affairs in Iraq, Syria, as well as the Islamic State, international piracy, home-grown terrorism, and the rise of 'trans-regional enabler networks' able to fight on par with national instruments of power are all examples of wicked problems.

If large and powerful nations struggle with these conditions, how can small nations such as Sweden even dare to complete? This again is where military design processes becomes a necessary tool for transformation, critical and creative thinking for the Swedish Armed Forces. The question is not whether Sweden needs to adapt design thinking into military

practice and organizational form, but precisely how it can do this and through what customized form? Each nation requires the relevant design that matches with a national identity, culture, and geopolitical context. Sweden is no different, and unique in many respects.

## Swedish Armed Forces and Military Design Implementation

Sweden, in keeping with formal and quite modern military form and function, will likely implement design using the strengths of the centralized military hierarchy form. Design also will enable Swedish defense leaders to appreciate the vulnerabilities of the centralized hierarchy as well, and over time develop opportunities for transformation and innovation. Initially, a top-down implementation of design into the Swedish Defence Staff might introduce core design concepts, language, and methodologies into the Swedish Armed Forces quickly together with the necessary interagency cooperation. Once a large enough initial pool of Swedish operational-level and strategic specialists and leaders gain the design skills, these designers will be able to conduct design inquiries with teams of Swedish designers for a variety of operational and strategic contexts. On highly complex topics of national defence, interagency cooperation, multi-national activities, as well as multi-national and interagency cooperation in both domestic and international security challenges, design processes will generate many more options for innovation, critical reflection,[39] and organizational transformation.

However, such a significant transformation in how the Swedish Armed Forces consider complexity, emergent conflict environments and its own organizational form cannot occur overnight or without numerous institutional as well as procedural barriers. Nor should such barriers be swept aside without deliberate and careful consideration on how a military might appreciate the continued displacement of defense concepts as the postmodern military movement takes shape.

While some militaries are attempting to apply decentralized design movements or enterprise-wide design insurgencies to trigger organizational transformation, Sweden likely needs to reflect on what makes the Swedish Armed Forces uniquely and culturally 'Swedish'. Here, "thinking together about how we think about security challenges" might be a more apt way to consider a Swedish design movement to transform our decision-making and problem-solving methodologies. This in order to create optimal conditions for our Commanders to shape their intent and continuously direct the planning process.

Swedish design might first occur using small pockets of designers that can begin leading "benchmark design inquiries" at specific wicked problems across the Swedish Armed Forces. Ideally, these benchmark inquiries would feature teams of Swedish designers coupled with international design experts that can both facilitate these inquires and also enable Swedish design development. These design teams will need to perform valuable design activities within the Swedish Armed Forces together with other agencies, so that over time, a demand signal for formalized design education grows from within the Swedish Armed Forces and other agencies themselves. The process of building trust among decision makers is essential here, with respect to trusting design concepts, trusting the growth of design in security applications, and trusting the design experimentation

that Swedish leadership might undertake initially.

## Conclusions and where Sweden Might Travel with Design

The design movement in the past generation of security professionals has become an international and truly interdisciplinary phenomenon. Design methodologies first manifested in Israel, a nation small in size yet with a technologically advanced security force confronting a dynamic and changing conflict environment. Anglo-Saxon Armed Forces soon followed, with design movements spreading to American, Canadian, British and Australian militaries in various forms and constructs. Today, a second generation of design innovation continues as Armed Forces such as Poland, Colombia, and the Netherlands and elsewhere introduces design processes into security applications and Armed Forces. In all of these developments, each nation has developed and adapted a design process that is tailored to the context of that nation's culture, values, and organizational considerations. Swedish design adaptation will undoubtedly be no different.

Swedish senior leadership might install design through strategic, interagency and operational level design inquires, using Think Tank structures as well as workshops, design lectures and educational exercises to grow a small yet influential group of Swedish designers. These designers will face the difficult task of adapting the right content and form for what Swedish design for security applications might become. A second yet significant challenge for this group is the organizational resistance likely to occur in the initial stages of design education and expansion. Nearly all other militaries appear to have experienced this disruption, where the larger institution resists the design revolution due to multiple reasons (some valid, and others not as much).[40]

Sweden might take lessons from militaries such as the US, Canadian, Australian, Royal Netherlands, and other previous and emerging design movements.[41] Implementation of design thinking in the Swedish Armed Forces will require decisive senior leadership, the identification and protection of a small group of willing design professionals, and the necessary cognitive as well as physical space for them to introduce and pollenate design thinking across the Swedish Armed Forces and within the Total Defence system from an interagency approach. This may be the ideal time and context for such a journey, and due to the international appeal of design for security applications, Sweden might embark in design collaboration with partners where strategic interests and complex problems align.

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# Notes

1. The views of the authors are their own and do not represent the positions of the United States military, U.S. Special Operations Command, the Swedish Armed Forces, the Joint Special Operations University or the Swedish National Defense College.
2. Lagerlöf, Johan and Pallin, Krister: "Doctrine and Command in the Swedish Armed Forces" in *Proc. Of the CCRTS Command and Control Resarch and Technology Symposium*, Newport, Rhode Island 1999, *http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.9401&rep=rep1&type=pdf*. (2016-10-31)
3. Personal correspondence between MG Urban Molin and the authors on 15th March 2017. Molin agreed for his comments to be included for the introduction of this article.
4. Bousquet, Antoine: *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity,* HURST Publishers Ltd., London 2009; Gharajedaghi, Jamshid and Ackoff, Russell: "Mechanisms, Organisms, and Social Systems" in Tsoukas, Haridimos: *New Thinking in Organizational Behaviour*, Butterworth-Heinemann Ltd, Oxford, United Kingdom 1994, pp. 25-49.
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6. There are many military design constructs, however the authors refer to commonly applied disciplines and fields in mixed-methods or trans-disciplinary design methodologies. Influential examples of this in military application include Israeli Defense Force's 'Systemic Operational Design' originally developed by Shimon Naveh, the U.S. Special Operation Command's 'SOCOM Design Thinking' as taught at the Joint Special Operations University, and the mixed-methods design education approach as taught in the Canadian Forces College in Toronto.
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