



Multi-domain Adversity and the Principles of Warfare

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Engagement opérationnel

Will the types of adversaries envisaged and the porosity between the engagement environments have consequences for how the war is won in the future?

In order to answer this question, it was necessary to consider the technological environment, the geopolitical and societal context up to 2035, the likely changes in forms of adversity and their implications for understanding the principles of warfare.

In the field of technology, history shows that the **acquisition of new capabilities always goes hand in hand with the generation of new vulnerabilities**. The latter are often of such a nature as to partially or definitively call into question the superiority temporarily obtained by one of the belligerents. For the participants in this workshop, only the possible convergence of quantum computing and Artificial Intelligence would be likely to constitute a disruptive factor between now and 2035. The permanent technological evolution indeed requires a continuous adaptation of mentalities, organizations and doctrines of use.

These processes are relatively slow and the definitive acquisition of a totally new weapons system generally takes several years. It is therefore unlikely that a truly disruptive weapons system (game changer) can be deployed and employed in a sufficiently significant way within 15 years. However, taking these technological developments into account could quickly lead to a paradigm shift in the pattern of weapons acquisition programmes. Today's operations express a need that the industry is striving to satisfy as best it can. The complexity of tomorrow's weapons systems, resulting from the convergence of several different technological advances, could reverse this pattern. The expert could thus tomorrow be the only one really able to envisage the full operational potential of a system under development. The capability dimension could then dictate the acquisition of equipment and therefore the conditions of use to the operational staff.

In the final analysis, the participants in this workshop do **not consider that the adoption of new technologies could constitute a major operational disruption, provided that they remain in the race to acquire those same technologies**. Indeed, the military gap between Western countries and their competitors is clearly narrowing. The adoption of new, more technologically advanced systems will thus have corollaries that should already be taken into account. In the case of autonomous lethal weapons systems, for example, the imperative that democracies set themselves to systematically keep man in the decision-making loop will very quickly come up against operational constraints. For example, in the implementation of anti-missile systems, the reaction time is of the order of one second, and moral constraints will very quickly come up against an adversary that does not allow itself to be hampered by the same ethical and legal rules as Western democracies.

Evoking the notion of multi-domain porosity means recognizing the permeability of the **different environments of confrontation (land, air, sea, space, cyber) to the effects produced from one environment to another**. If the realisation of kinetic effects from one medium to another does not pose a real problem of understanding, it is quite different if we consider the realisation of effects in immaterial fields. The fact is not new: the preliminary modelling phase of Operation Iraqi Freedom in 2003 had already demonstrated that actions carried out in the immaterial fields (cyber, influence) must imperatively precede, accompany and then conclude any operational campaign. However, tomorrow's adversary, who may be characterised more by his intentions and objectives than by his capabilities, will probably systematically seek to circumvent force by winning the information battle.

The information battle, in the broadest sense, will include both an aggression/protection aspect of connectivity and information processing, but also the aspect of influencing and acting on perceptions. Mastery of offensive and defensive capabilities in cyberspace will therefore be a vital imperative. Moreover, winning militarily will remain futile if the battle of story telling cannot be won. The **distinction between kinetic and non-kinetic manoeuvres will therefore no longer be desirable, and will no doubt even be possible, and will require** planning and coordination of effects and means, according to a systematically cross-domain approach. Mass and technology, while still indispensable, will therefore probably no longer be sufficiently decisive factors of operational superiority. Thus, the design of any campaign or manoeuvre will necessarily have to be approached from an inter-domain, international, inter-ministerial, intercultural, etc., angle.

Furthermore, the porosity of the battlefield can also be understood as a permeability of **space**. Thus, in spite of its ease of reading, it is unsatisfactory, in an attempt to apprehend the planetary antagonisms of tomorrow, to be satisfied with a map indicating currently identified adversaries or a designated arc of crisis. The understanding and anticipation of conflicts in 2035 could indeed escape a single and simple territorial dimension, or fail to take into account the emergence of a power not yet attracting attention. It seems more relevant to consider the major geographical areas through likely future interests in 2035.

Finally, the porous nature of the zones of engagement raises questions about civil-military action in conflict resolution. Increasingly, **conflict is moving towards deterritorialised areas, where military means are not necessarily the most relevant**

and effective (AI, security, cyber-attacks, communication). Will it therefore be necessary to transfer these skills to the military (knowing how difficult it is to retain in our forces experts who are much better paid in civilian life) or will we have to delegate certain missions to civilians? The question arises because the areas mentioned are completely disconnected from geography. Indeed, it is not necessary to be present in the theatre of operations in order to take part in combat actions.

On the strength of this initial analysis, the participants in this workshop focused their discussions on the principles of **warfare around** the need, or not, to have principles to conduct tomorrow's battle. Implicit in this is the question of how these principles should be understood. What role should they play in a decision-making process, particularly when the political directives to which they are subordinate lack clarity?

A consensus has been reached on three principles: freedom of action, economy of means and concentration of effort. However, other principles adapted to the changing context in 2035 were also mentioned. First of all, the principle of **proportionality, which** translates into the fair sufficiency of the means allocated to the accomplishment of a mission. Then, the principle of **comprehension made** necessary by the complexity of the conflicts envisaged and made possible by technology allowing a certain transparency of the battlefield. However, it was agreed within the group that this transparency would never be total and that risk-taking would therefore always be necessary.

In conclusion, it is clear that the porosity of the battlefield will have significant consequences for the way we fight in the future. While retaining the ability to conduct conventional manoeuvres, the adversary will no doubt be able to carry out combat in areas still unfamiliar to armies and in which they are not necessarily the most competent to act effectively in a global and integrated manner.

The challenge for the years to come is therefore most certainly to develop the capacity of our forces to coordinate actions and effects across fields, carried out by the most appropriate actors and vectors. This observation makes the principles of warfare as we know them fully relevant again. Only the modalities for the implementation of these principles will be able to evolve according to the context and the objectives assigned to the force.

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Author (s) :	CDEC
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