

Persistence as the 10th Principle of War

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“Strategic... attack is wasted if it is dissipated piecemeal in sporadic attacks between which the enemy has an opportunity to readjust defenses or recuperate.”

-General H. H. “Hap” Arnold

Hap Arnold had it right: give the enemy time to recuperate and your efforts are wasted; relentless engagement crushes an enemy’s morale and will to fight. General Arnold recognized the value of persistence in attack, but in his day persistence meant persistence in *effort*, keeping up the fight day in and day out. Despite a commander’s best efforts the fight could be interrupted by bad weather preventing movement of friendly forces, by the logistical demands of feeding, resting and re-arming men, or by terrain that granted cover or concealment to an enemy. Lulls between engagements were often measured in days, sometimes weeks. The bombing raids of Germany during World War II were considered ‘persistent’ even though the bombings were only daily at best, leaving many hours of respite for the enemy between attacks. The applicability of persistence is changing now as technological advancements have bridged the previously unavoidable gaps. The apex tool for commanders, true persistent offensive *engagement*, is now possible. This paper therefore argues for persistence as the 10th Principle of War.

What makes true persistence now achievable? The answer lies in the appearance of a new system on the battlefield, the armed Unmanned Aerial System (UAS). UAS’s provide an unprecedented capability to match continuous target tracking with offensive strike capability. The key achievement of UAS’s, the step that makes true persistence possible, is the removal of the human pilot from the engagement loop. Humans still control the process but are no longer integral to its execution. In the past, persistence meant persistence in effort; it now means persistence in *engagement*. Military strategists have long recognized the human pilot as the limiting principle of aerial platforms. The need for life support systems and the physiological limits of human endurance inherently limit piloted platforms. And in the arena of large force-on-force engagements the logistical demands of feeding, resting and re-arming men are a constraint; as necessary as they are unavoidable. The modern commander now has an asset to bridge those engagement gaps. Armed UAS’s provide the critical tool to fill the inevitable gaps in human-on-human warfare.

Unmanned Aerial Vehicles (UAV's) were used over Vietnam in great numbers but offered reconnaissance capabilities only. Unable to directly engage targets, those UAS's were not able to capitalize on the penetration of the deep battlespace. Opportunities to deny the enemy the time and space protections of the deep battlespace were lost, a crucial relief to the enemy. The "modern deep battle exists as much in time as in space" (Dr. David Kilcullen, Joint Urban Warrior, April 2008), and UAS's can engage in both dimensions. The employment of UAS's throughout the deep battlespace allows the compression of battle-time, denying the sanctuaries of time and space to the enemy. Equally important, it also denies the enemy the option of disengagement from the battle. These effects engender significant disruption within the enemy's decision cycle and force a cascading degradation of command and control. Denied the recuperative refuges of time and space, every battlefield system of the enemy deteriorates exponentially faster. Pressed into defensive decision-making, distracted by the need for self-preservation and constantly reactive to attack, enemy commanders will find themselves making decisions in the midst of command and control chaos.

The principal obstacle to engagement persistence has been in developing technological substitutes for the human pilot's sensor systems, his eyes and mind. Short of true artificial intelligence, this has been achieved through an intermediate step that replaces the pilot's vision with multiple sensor systems, places flight control in the hands of a ground-based controller and allows the engagement decision-making to occur on the ground in friendly territory. Current sensing technology can pierce the obscuring veil of bad weather, can see farther (literally) into the battlespace and can peer around or even through obstacles. The Global Hawk, Raven, Scan Eagle and BATMAV provide surveillance capability, while the Predator and Reaper combine observation with armament. Loiter time over the battlefield currently exceeds 35 hours and, significantly, these craft are re-taskable in flight. UAS's can travel at altitudes exceeding 60,000 feet and are effectively invisible to radar, placing them safely above virtually all enemy missiles. Thanks to this near-invisibility they can be flown over dangerous territory to expose the enemy in terrain that normally would provide cover or concealment.

Some might argue that piloted craft could be launched sequentially to provide continuous cover over the battlefield. This argument breaks down in two ways, first in the practical consideration of sustainment: the logistics and cost of such an effort cannot be effectively borne over the long term. Secondly, piloted platforms bear the additional burden of risk to the human pilot. Losses are expected in the cold calculus of combat but no commander will unnecessarily risk valuable pilots. That simple constraint in the mind of the commander will inevitably tilt against the use of piloted platforms when mission risks are deemed unacceptably high. This, in turn, creates an inherent weakness in dependence on piloted platforms. Yet even when UAS's do not directly engage a target the availability of their real-time information feed allows other battlefield systems to be brought to bear: piloted aerial platforms, artillery and ground-launched weaponry can be rotated into the fight with no loss of contact. As one weapon system is expended another can be engaged and the ability to track targets is not lost. Further still, UAS's provide a capability for battle damage assessment that avoids the unnecessary expenditure of engagement platforms against targets that have been satisfactorily degraded. The

confidence to *dis*-engage increases the overall efficiency of our effort and becomes yet another value of UAS engagement.

Why should persistence be named as a principle rather than considered a subset of one of the existing principles? Because the concept of persistence as an enduring principle in itself finally meets the criteria: it is discretely definable, distinguishable from existing principles, applicable to the whole of military effort and feasible. Like all ideology, military doctrine and guidance must undergo periodic review to retain its validity. Scientific, business and mathematical principles are routinely revisited to encompass new discoveries, changed variables and technological advances. Review of military principles confirms their continued validity, highlights the need to revise guidance when circumstances dictate and identifies opportunities to develop new principles. The great military theorists of the past recognized the limitations of the principles they prescribed: principles for warfare are not independent of the arms employed, nor of times or places. Guiding principles must be periodically reviewed; this point is nearly as fundamental a truth as the principles themselves. “What are the influences on military doctrine but government policy, technological advance and the lessons of history? These are the very items that engender change in doctrine.” (From a 1994 essay on naval doctrine by Dr. James Tritten, special advisor to the Naval Doctrine Command). Just as periodic warfare incidentally re-validates the existing principles of war, so too does it reveal the emergence of new principles. This potential for the recognition of deserving concepts is nothing new: “Concurrently, there is a growing body of evidence that makes a persuasive case for the addition of new principles...” (*Inside the Pentagon*, July 2004).

The existing nine principles of war represent guidance in the planning and employment of military forces. Economy of Force, Unity of Command and Simplicity, for example, are not effects an enemy will see or feel directly, but he will feel the results of a campaign designed with respect to those principles. In that same vein a commander can now design and plan true persistence into his campaign. This highlights a crucial aspect of naming persistence as a principle of war: it must become axiomatic to military planning. A principle of war is a “fundamental precept or truth derived from experience and demonstrable by example that may guide -- time and circumstances permitting -- the effective conduct of military actions,” (Anthony McIvor, *Inside the Pentagon*). Perhaps the spirit of this proposal is best captured in the Dictionary.com definition of persistence: “To be obstinately... tenacious.” Obstinate tenacity as a military capability has an appeal to it. This may lead some to see the concept as one of ‘bulldogged perseverance’, asking why the new principle should be “persistence” and not “perseverance.” The distinction may be measured in shades of grey but literal clarity recognizes that perseverance is continuance of *purpose*, whereas persistence is continuance of *action*, and action is the key to this principle.

What about the vulnerabilities of current UAS's to enemy defenses? With no pilot to respond to enemy countermeasure threats and a sensor package designed primarily for offensive sensing, a UAS's best defense lies in its stealthy nature. UAS's are difficult to detect or engage due to their low signatures and, secondly, vulnerability doesn't preclude their use. Though expensive, they are expendable in a way that human-piloted platforms

are not. Redundant (multiple) systems can be launched with backups only coming on line if the primary system is destroyed. Some weaknesses remain in the capabilities of the UAS's, especially geographical coverage capacity and limited armament. Neither the sensor systems nor the weaponry on current UAS's allow coverage of large tracts of terrain at once or the engagement of numerous dispersed targets. The point-strike nature and relatively light weight of current UAS armament means they are best employed against specific targets and smaller target areas. Current capacity restraints mean that the dedicated use of UAS's for persistent engagement, rather than simple battlefield observation, makes them a scarce resource in high demand; suitably high prioritization in targeting will be necessary. A future challenge will lie in developing systems to manage the sheer numbers of UAS's in the air and the tremendous volume of feedback they provide as the capability matures. Efficient management of that information, particularly in weapons-release authority, will have to remain far enough forward in a commander's hands that the utility of persistence is not lost. But the persistent capability does exist now and system management capabilities will improve with time.

This military generation is witnessing the emergence of persistence as an achievable military principle. Certainly it is still developing, both as a promise of performance to come and a goal toward which we should strive, but it has arrived nonetheless. Armed UAS's have created a fundamental new dynamic on the battlefield and a cardinal capability for commanders. In an 1862 address to Congress, President Abraham Lincoln noted, "The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so must we think anew, and act anew." The time has come to recognize the distinguishable and feasible principle of persistence as the tenth Principle of War.

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