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Non-Lethal Interstate Warfare

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The recent conflagration at Galwan Valley and North Bank of Pangong Tso Lake in Eastern Ladakh between two modern armies, was bereft of all visages of technology and deteriorated to primal prehistoric warfare with clubs, stones and batons. This descent from a high pedestal of Informationised Battlefield to slugfest has brought a new dimension to warfare or was it just a non-lethal application of force gone awry? Historically, armies have sought to increase the lethality of weapons to achieve political objectives and military success. However, this approach might not be the most effective means to maintain stability in the current regional environment. Political, societal and operational factors may have limited the effective use of a traditional military response. Military operations, the world over, be it against a state or a non-state actor, have highlighted the difficulties of adopting existing military tools to the new strategic setting. Hence, there seems to be a clamour for new strategy options and credible coercive tools. Non-lethal capabilities that can coerce or deter, while limiting casualties and destructiveness, are being hailed as an answer.

Key Points

- Armies aim at enhancing lethality of weapons to achieve political objectives and military success. However, this approach may not be effective to maintain stability in the current regional environment.
- Armed forces have to start looking for non-kinetic application of militaries which include military diplomacy, coercion and intimidation.
- The evolution of non-lethal technologies for more general warfighting applications needs to be conceptualised.
- Non-lethal weapons can be classified by either function or technology. However, it is more useful to describe emerging capabilities by function, either as anti-material or anti-personnel.
- There is an increasing demand to minimise casualties and collateral damage, even in interstate conflicts based on factors like intrusiveness of the media, low tolerance of risk and high regard for life in modern democracies.
- The political and moral advantages of non-lethality are of little value if the non-lethal weapons effects pose a significant, unintended health risk or unacceptable environmental impact to the region or deteriorate due to inept handling of assets.
- There is a need for careful decision making to ensure that strategies permit a lower threshold of conflict and do not decrease the threshold for intervention. Non-lethal intervention should not lead to frequent adventurism.
- The employment of non-lethal technologies allows military force to better meet the future challenges by reducing risk of intervention, permit intervention at a lower level of conflict, protect the will to intervene, allow more rapid reconstitution of attacked infrastructure and permit greater synergy of political and economic tools.

Non-Lethal ...

What PLA demonstrated was a nascent attempt to control violence which went horribly wrong and resulted in casualties which became "unpalatable to the polities on both sides of the LAC". This is to say that the armed forces have to start looking for non-kinetic application of militaries which include military diplomacy, coercion and intimidation. Like in our case, we had used deployment of forces post parliament attack as a tool of coercion. Each country is exploring new options for such use of military, be it the Russian Army using mercenaries (little green men) in Ukraine or US deployment of aircraft carriers in the South China Sea. The aim of this paper is to synergise two dichotomous elements—non-lethal weapons and conventional military, and proffer a novel idea to handle future conflicts.

The primitive non-lethal weapons represent a 'metastasis' from the increasingly lethal evolution of military arms. There has been no acceptance of such primitive non-lethal weapons by the international defence community, and has not been paid much attention by strategic thinkers worldwide. Several advocates attempted to focus the debate on the kinetic use of military force vis-à-vis such rioting or give it a moral twist of non-lethal weapons, however, the Indian Army was quite rightly surprised and caught wrong-footed by use of such tools of disruption. As a result of this experience, Northern Command of Indian Army crafted a policy to consolidate procurement priorities to expedite anti-riot gear which was met with a deluge of criticism but then you can't go to "play a cricket match with a hockey stick in hand". It brings to the fore the question of employment of non-lethal technologies for tactical applications i.e. the evolution of non-lethal technologies, for more general warfighting applications, needs to be conceptualised. It is where non-lethal technologies can make the greatest contribution to future warfighting, thereby enabling more effective political strategies and potentially changing the nature of war itself.

Considering that the evolution of conventional munitions occurred over the last several centuries, the evolution of non-lethal technology is in its infancy. The advancement of these technologies has been recent and largely unfocused. The current state of art must be considered a starting point for continued advancement and future non-lethal employment must encompass an expanded range, precision and effectiveness, but at the same time must remain technically and operationally realistic. Non-lethal weapons can be classified by either function or technology. However, it is more useful to describe emerging capabilities by function either as anti-material or anti-personnel. In these categories there are no absolutes. While some technologies may be used for either purpose depending on the needs of the military strategy, only those applications that may have some implications to a warfighting role are detailed at the table below.[1]

Technology	Anti-Material(M) Anti-Personnel (P)	Application
Conductive Particles	M	Any variety of particles that can induce short circuits in electrical or electronic equipment.
De-polymerising Agents	M	Chemicals that cause polymers to dissolve or decompose. Could clog air-breathing engines. Adhesives could glue equipment in place.
Liquid Metal Embrittlement Agents	M	Agents that change the molecular structure of base metals or alloys, significantly reducing their strength. Could be used to attack critical metal structures, aircraft, ships, trucks, metal treads.
Non-Nuclear Electromagnetic Pulse	M	Pulse generators producing gigawatts of power could be used to explode ammunition dumps or paralyse electronic systems. Vulnerable systems include electronic ignition systems, radars, communications, data processing, navigation, electronic triggers of explosive devices.

Super-caustics	M	Acids that corrode or degrade structural materials.
Super Lubricants	M	Substances that cause lack of traction. Delivered by aircraft, can render railroads, ramps, or runways unusable for limited time.
Acoustics	M, P	Very low frequency sound generators that could be tuned to incapacitate personnel. At high power may have anti-material applications.
Lasers	M, P	Low energy lasers could flash blind personnel or disable optical or infrared systems used for target acquisition, tracking, night vision, and range finding.
Calmative Agents	P	Chemical substances that are designed to temporarily incapacitate personnel.

Source: Annotated by Author.

Not delving into technology, the focus is on formulation of an appropriate military strategy that is directly linked to the strategic setting, technological capabilities, national interests and fiscal constraints of India in the post-COVID period. Revolutionary advances in military technology are non-consequential, unless they enable more effective or efficient application of military force in the context of our international strategic environment and national interests. Non-lethal weapons, like any military technology, must serve these demands. Therefore, if the strategic or operational setting is fundamentally different like on LoC and LAC, fresh approaches in the application of military and political tools may be needed. From this perspective, an assessment of non-lethality's role as a strategic weapon must be viewed through the lens of our future strategic setting.

The nature of the regional landscape with two putative adversaries and many other nations, becoming assertive at someone's behest, is hotly debated among military scientists and futurists. Given that conflict will continue and perhaps become more frequent, India must adapt its military strategy and doctrine to maintain effective tools that serve our new national interests within the regional and global calculus.
The global scene may appear more chaotic but there is a single characteristic that distinguishes today's era i.e. major economic and military powers like the United States, Europe, Japan, China, India and Russia for the next several decades, will be driven by common economic and political purposes. This has several obvious implications. First, is the primacy of economic growth. The drive toward economic growth binds the powers together. The rise of the market as the principal interface for economic growth promotes interdependence among participating states that will extend our strategic interests well beyond territorial borders.[2] The result is the desire of major powers to favour a continuation of the military and political status quo. Most experts agree that China, as a peer competitor to the US, is likely to emerge in the next few years. China will challenge the role of the US as a world leader which may lead to intervention that could result in a power struggle. India may get caught in this quagmire and cultivating the national will to counter this "expansionist strategy of China" will be increasingly difficult, as the threats become more indirect. In spite of these obstacles, India must retain the national will and maintain the tools to be decisive in its role. Without the lid of Cold War, many of the regional religious and cultural rivals are increasing tension and conflict. This feature of the strategic setting adds another complication to military intervention. Conflict involving non-state actors is likely to occur in the midst of the civilian population. The mingling of civilians and combatants will force the military to adopt more restrictive rules of engagement or new strategies to reduce the risk of civilian casualties, while at the same time maintain effectiveness against the threat. The Indian Armed Forces are currently restricted in the tools it can employ, which means that intervention is constrained.

There is an increasing demand to minimise casualties and collateral damage, even in inter-state conflicts. This element is based on many factors which includes the intrusiveness of the media, low tolerance of risk

and high regard for life in modern democracies.[3] The desire to minimise friendly, civilian and own casualties permeates the decision process. The perceptions of excessive destruction directly impacts the sustainment of own actions. Another element is the reversibility of damage. It is in our interest to re-establish stability and limit human suffering, following a conflict. The rapid reconstruction of infrastructure and return of economic viability is necessary to restore regional stability, satisfy moral obligations, and protect India's economic interests.

The debate on non-lethal technology employment suffers from the need to characterise strategic non-lethal technologies. Many of the proposed technologies remain in research and development. As a result, there is a lack of objective data to test the effectiveness of non-lethal applications. The lack of combat testing, exercising, and military experience in this category of weapon leaves the military services unconvinced. The question, "Can non-lethal weapons be decisive?" is still difficult to answer. In principle, the concept of non-lethal employment is compelling. The ability to use technology to defeat an enemy without casualties, appeals to our sense of morality. This vision is inspiring but, unfortunately, unrealistic. While thoughts of a near bloodless battlefield have long been abandoned, the visionary promise of non-lethality leads to widespread misconceptions that are likely to prove counterproductive and potentially dangerous.[4]

The first caution stems from accepting non-lethal characteristics too literally. Non-lethal weapons consist of a large array of technologies with differing characteristics and effects. Application of these weapons, while intended to minimise material and personnel damage, may well kill. An anti-personnel attack by chemical or directed energy weapons may be fatal to a percentage of the population with a low tolerance for particular weapons effects, or an anti-material attack on an electrical grid may prove fatal to vulnerable civilians requiring life-sustaining electrical equipment in the hospital. Further, the incomplete testing of non-lethal technologies leaves doubt about the significance of the long-term effects to humans and the environment. The political and moral advantages of non-lethality are of little value if the non-lethal weapon's effects pose a significant, unintended health risk or unacceptable environmental impact to the region or deteriorate due to inept handling of assets, as it was recently visible. To be effective, the use of these weapons must objectively consider the target, timing and mechanism of the desired effects while considering the unintended consequences.

A critical element of the debate is whether this represents a more effective means to manage crisis or if it is a slippery slope to more frequent intervention in areas of marginal national interests or a mechanism promoting an escalation of conflict. The attractiveness of non-lethal weapons may drive decision makers to get involved, as it is important to do so. The appeal of a low-risk, easy response may become addictive and thus cause inappropriate interventions and eventual military quagmires. There is no doubt that the availability of effective non-lethal weapons may provide an incentive for adventurism. However, military operations remain subject to national policy and will. The nation should not defer development of a more effective and humane military capability because they do not trust the judgement of the decision makers. Rather, we must educate decision makers on the dangers of inappropriate use of non-lethal weapons and expect them to take their obligations seriously.[5] Non-lethal policy and doctrine must be crafted to address these concerns.

The second risk with using non-lethal technology for crisis de-escalation is asymmetric. The leaders of a state targeted by non-lethal weapons, may not be able to respond in kind. In response to a non-lethal attack, the targeted leaders may feel justified in responding with lethal force, terrorism or even weapons of mass destruction, as our Western adversary keeps brandishing its Tactical Nuclear Weapons. If a state is denied critical electrical production capability, then it is not important how the effect was produced, but only that the loss exists. Therefore, there is a risk of escalation with non-lethal intervention, but it is probably reduced when compared to use of lethal

means. This underscores the need for careful decision making to ensure that strategies permit a lower threshold of conflict and do not decrease the threshold for intervention. Non-lethal intervention should not lead to frequent adventurism, but it should be retained for situations in which our national interests are at risk.

To date, there has not been a serious effort to incorporate the implications of non-lethal concepts in strategy or policy planning. Although there appears to be an acceptance of non-lethal employment for tactical operations during peacetime engagements, expansion of non-lethal horizons is not yet accepted in military strategies and missions involving the range of conflict beyond peace enforcements. The attributes of non-lethal tools enable a visible demonstration of intent or disruption of warfighting preparations without significant casualties and material damage to the enemy. This offers a potentially powerful and flexible coercive tool that can be applicable across the range of military options. On the lower end of the spectrum of conflict, non-lethal technologies could substantially increase the effectiveness of traditional sanctions and economic measures. A greater ability to enforce compliance of sanctions by other states, allowing non-lethal means to stop or inspect suspect shipping, and an ability to selectively disrupt transportation within the target state adds significant strength to this option. Non-lethal technical sanctions may achieve more immediate results, permit selective effects against the specific vulnerabilities, and enhance the ability to vary the level of effects to complement political initiatives. In addition, non-lethal technologies may offer the means to intervene in close proximity to non-combatants without unnecessary risk to the civilian population. The combination of effects provides an incentive to compel a change in behaviour and may preclude intervention by lethal military force.

Non-lethal technologies enable intervention at a lower threshold of conflict. The precision of effects and the ability to employ it as a standoff weapon (via cruise missile, RPAs or aircraft) will decrease the political and military risks that presently constrain our decision to intervene. While military intervention may not be able to resolve the core issue driving the confrontation, the appropriate non-lethal application may provide the time and distance necessary to de-escalate a crisis or signal the intent to ward off a potential conflict. A non-lethal intervention can maintain political options since it may not harden a population against future diplomatic efforts or arrangements. National decision makers no longer have to contend with the paradox of engaging in peacekeeping operations with overwhelmingly lethal military tools. At the higher end of the spectrum of conflict, non-lethal technologies provide a significant complement to lethal force during a major conflict, particularly as the effectiveness of non-lethal technologies develops. As previously noted, it is difficult to understand the operational implications, given the unknowns of an immature technology, but the impacts should expand as the technology evolves. The vision of airpower is to attack the fundamental centres of gravity in the state's leadership, infrastructure and war-making capabilities as was demonstrated by the execution of the air campaign in 'Operation Desert Storm'. Non-lethal weapons provide a natural complement to this military strategy. The precise effects and selective nature of engagement can support an efficient, high-tempo strategic attack of vital targets while limiting the level of violence. The larger radius of effects for future weapons may enable devastating, simultaneous effects on a country-wide scale. Although it may not be politically feasible, but a sea-launched ballistic missile armed with Electro-Magnetic Pulse (EMP) munitions could achieve substantial disruption to a nation's vital centres of gravity with a single strike. This type of attack required scores of sorties and days to achieve similar destruction during 'Operation Desert Storm'.

Conversely, the employment of non-lethal technologies allows a modest sized force to apply overwhelming pressure to the leadership and war-making capabilities, during the initial stages of a campaign. The ability of non-lethal weapons to delay, disrupt, and disorient can make the enemy forces more vulnerable to lethal attack. The destruction of electronic devices in military equipment and vehicles, disruption of vital transportation and denying critical communication

places, would put the enemy leadership in a position thereby, forcing them to reconsider whether to continue military operations or suffer the consequences of a lethal attack. For example, a non-lethal attack can disrupt air defence, degrade sophisticated electronics in fielded military forces and render many vehicles unusable. The attack could render a significant portion of the military force either undefended or non-operational, leaving them in a highly vulnerable position. A subsequent attack on the disabled forces with conventional munitions can be conducted at the discretion of national decision makers and military commanders.

The synthesis of strategic policy needs and characteristics of non-lethal weaponry provides a strong case for the development and employment of non-lethal arms. The employment of non-lethal technologies allows military force to better meet the future challenges. They reduce the risk of intervention, permit intervention at a lower levels of conflict, protect the will to intervene, allow more rapid reconstitution of attacked infrastructure and permit greater synergy of political and economic tools. Restraints to intervention are weakened, permitting a bolder, pre-emptive intervention strategy at a reduced risk and cost. Further, non-lethal technologies add strength to Indian Forces engaged in a major conflict. The enabling features of non-lethal technologies allows a smaller force to be decisive.

Notes

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