

# MULTI DOMAIN WARFARE - FUTURE CHALLENGES IN THE INDIAN CONTEXT

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*“If people use information-centric bio-weapons to attack a bio-computer, should this be counted as bio-warfare or information warfare?”*

*- Liang and Xiangsui Unrestricted Warfare, 1999*

## **Abstract**

*The nature of war has been and will remain an act of imposing one's will on the adversary. However, the character of war i.e how future wars will be waged and fought has transformed due to numerous geopolitical & socio-economic factors, technological advancements and military innovations. Warfare today is a complex phenomenon likely to be waged in the multi-dimensional and multi-domain space. This complexity will increase in the future. The reasons include high technology, the nature of modern war, new threats and challenges and the reality of nuclear weapons in the arsenal of our potential adversaries.*

In the last five centuries there have been 16 transitions of world power, of these only four have been non violent. 12 of the 16 transitions resulted in major wars. As the power shifts from the West to the East and China readies to challenge the US hegemony in the coming decade, despite the interdependencies, there is a considerable likelihood of a violent struggle. China is getting ready to seek a Bipolar world and the US will resist any challenge to its supremacy. As China grows in political, economic, military and technological power, it challenges the United

States for the sole superpower status. The first indicators were evident during President Xi's first visit to the United States after appointing himself as the supreme leader, wherein he asked the United States to treat China as a strategic equal. President Xi in his speech on 22 September 2015 contradicted experts who have talked about the "Thucydides Trap" where an emerging power like China threatens an established power like the US. To quote president Xi "There is no such thing as the 'Thucydides Trap' in this world, but should major countries time and again make the mistake of strategic miscalculation, then they might create such a trap for themselves" he warned. As and when the transition of power takes place, it will directly impact India's security, as India shares a 3488 km long unsettled border with China. A responsible risen India, a regional power and a global leader, is perceived by China as a threat to the 'China Dream' and 'Dominance'. The ongoing standoff and stalemate along the Line of Actual Control (LAC) in Eastern Ladakh is indicative of China's strategic intent of containing India as she perceives that India is and can be a threat to China's ambitions and interests in challenging the US. China's 'Military Coercion' along the LAC is a manifestation of China's strategic anxiety and concern, India being the only nation which has not only not endorsed the China Dream project of BRI but in fact has openly opposed the project, as it violates India's territorial integrity and sovereignty. The emerging post Covid world order will dictate not only India's global role but also the multiple security challenges.

The nature of war has been and will remain an act of imposing one's will on the adversary. However, the character of war i.e. how future wars will be waged and fought has transformed due to numerous geopolitical & socio-economic factors, technological advancements and military innovations. Warfare today is a complex phenomenon likely to be waged in the multi-dimensional and multi-domain space. This complexity will increase in the future. The reasons include high technology, the nature of modern war, new threats and challenges and the reality of nuclear weapons in the arsenal of our potential adversaries.

The security challenges for India can no longer be defined and definite, as these are likely to be hybrid, conducted in many battle spaces by multiple means driven by a collective ideology, plausibly

without any direct attribution and without any overt physical military application of combat power ab-initio. A collusive or collaborative threat from both China and Pakistan is a probability which India should consider seriously, especially so with China's aggressive behaviour along the LAC since May of 2020. China will exploit Pakistan as a proxy to contain India. In the event of a China threat, Pakistan will only be too willing to support its all-weather friend China and a collaborative threat from Pakistan would be imminent, as it takes on a mightier India preoccupied with China along the Northern Borders. Hence, it would be prudent to conclude that during a future Indian military conflict with China, Pakistan will come to China's military aid but reverse is a high probability but not a given.

The armed forces are mandated to ensure the territorial integrity of our nation, which also implies securing our borders. India has the longest disputed land borders in the world - 3488 km of the Line of Actual Control (LAC) along the India-China border, 772.1 km of the Line of control (LC) in J&K and 126.2 km of the Actual Ground Position Line (AGPL) in Siachen Glacier in addition to a 7516 km long coastline. India's unsettled and porous borders manned by the army lie at altitudes of 4,500 meters and above with woefully inadequate infrastructure and extreme climatic conditions demanding ab initio deployment of a large number of troops. China's aggressiveness and assertiveness is increasing, both in intensity and frequency. The clash at Galwan on 15/16 June 2020 violated the hithertofore four and a half decade old 'Peace and Tranquility' along the LAC. China today is the clear and present danger. As China propagates 'Unrestricted' and 'Non-Contact Warfare', the security challenges for India have multiplied exponentially. The continuing proxy war being waged by Pakistan, the ever increasing and omnipresent threat from terrorists employing technology as enablers are the new age threats to the wellbeing of 1.39 billion Indians. Future threats emanating from Pakistan are likely to involve states or a state-sponsored actor as key tools of the 'Low Cost High Effect' proxy war. States will however continue to predominantly determine the spectrum, location and impact of threats. A conflict with nuclear overhang either with Pakistan or a limited conflict with China is a high probability in

the near to midterm. The internal political and economic instability in Pakistan, sectarianism and the rise of fundamentalist and terrorist organisations make it a major source of instability in the region given the withdrawal of US forces from Afghanistan. There also continue to remain a number of other fault lines between India & Pakistan, disputes over J&K, Siachen Glacier, Sir Creek, river water sharing and a long standing distrust of each other's intentions. Thus, making peace between India and Pakistan a rather improbable option. India's relations with China over the medium to long term will continue to be marred by disputes over the perceptions of LAC and conflicts over spheres of influence in the Indo-Pacific, which is a strategic vulnerability for China. China will also continue to oppose all Indian efforts to assert its rightful place in the comity of nations by blocking her membership of NSG, UN Security Council etc. The ongoing stalemate along the LAC is only a short term measure to contain escalation by both sides. Both India and China feel that this is not the right time and opportunity to escalate the situation on account of near combat parity along the High Himalayas. As China's strategic intent is to contain India, she will resort to 'Unrestricted and Non-Contact Warfare to tie down India and keep it away from being a dominant player in the 'Balance of Power' given the shift in the emerging global order. A limited conventional conflict of short duration can also not be ruled out, in the event both China and Pakistan see a chink in India's defence preparedness. Hence it is imperative that India and the Indian Armed Forces continue to be optimally prepared to meet and mitigate all security challenges emanating in multiple domains.

### **Multi Domain Warfare Challenges**

2020 has been a defining year. COVID19 and an aggressive China have been the biggest disrupter of the century, impacting the behaviour of individuals, society, people and nations. As India was trying its best to battle the made in China coronavirus, providing much needed medical assistance to many a nation including the US, following Sun Tzu's dictum "In the midst of chaos, there is also an opportunity", China violated the spirit of the Five agreements which had ensured 'Peace and Tranquility" along the 3488 km India - China border for nearly four

and a half decades, resorting to its tried and tested strategy of 'Military Coercion'. Post Galwan violence in June 2020, a fragile peace has been established with the world's two largest armies locked in a standoff across the high Himalayas. The China threat is the real and present danger making the two front war a reality in the near to mid-term. China is not likely to have achieved her strategic objectives in the face of a resilient and effective Indian response based on the doctrine of 'No Blinking No Brinkmanship', with India ensuring an effective and timely equitable and proportional deployment. China's military coercion can now manifest in multiple domains based on their operational philosophy of 'Unrestricted Warfare' or multi domain warfare.

What is multi domain Warfare? Simply defined Multi-domain warfare hence implies creating an effect in one domain that produces an effect in other. Multi domain-specific capabilities can be leveraged to defeat a capable foe in another domain, or the 'force-on-force' operations would supplement the creative ways<sup>1</sup>. The concept of wars is growing ever more complicated, including all-pervasive information warfare, to applying multi-functional and multi-domain military capabilities below the threshold of armed conflict or the coupling of economic power with militia and irregular forces. Indeed, ...the very rules of war have changed. The role of non-military means of achieving political and strategic goals has grown, and in many cases they have exceeded the power of force of weapons and their effectiveness<sup>2</sup>. This implies that wars in future could well remain unannounced in non-kinetic format and may even be successful in achieving political goals with or without transcending to force-on-force wars. The Key Question is how and what does multidomain warfare imply in the Indian context, given that the major threats emanate from China and Pakistan.

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1 <https://www.google.com/search?q=multi+domain+warfare+definition&oq=multi+domain+warfare+definition&aqs=chrome..69i57j33i22i29i30.12794j1j15&sourceid=chrome&ie=UTF-8>

2 Rakesh Sharma, Multi Domain warfare - Cross Domain Deterrence CLAWS , accessed at <https://www.claws.in/multi-domain-warfare-cross-domain-deterrence/#:~:text=Multi%2D-domain%20warfare%20hence%20implies,would%20supplement%20the%20creative%20ways.>

In February 1999, two Chinese Peoples Liberation Army PLA senior Air Force colonels, Qiao Liang and Wang Xiangsui, published *Unrestricted Warfare*. The authors argue that ‘The Battlefield is Everywhere’ that the combination of weapons systems can create a new kind of technical space, a new battlefield that never existed before. Electronic and information technologies have created a net space, which can become a battlefield. The battlefield extends simultaneously at the micro, medium-range and macro level as well as in various hybrid technical spaces in ways it never did before. The proliferation of weapons and technologies has blurred the distinction between the soldiers and civilians and between the battlefield and the non-battlefield. The battlefield is everywhere. From a computer room or on from the trading floor of a stock exchange a lethal attack on a foreign country can be launched. In such a world is there anywhere that is not a battlefield? Where is the battlefield? It is everywhere<sup>3</sup>. In the Indian context China does have the capability and capacities to wage a non-attributable war in multiple domains and dimensions, raising the costs for India and styming her growth.

The blending of technologies for war in the global era have ended the dominance of weapons in war. From this new baseline the relations of weapons to war have changed and made the concept of war itself vague. Is a hacker attack an act of war? Is using financial tools to destroy a country’s economy an act of war? When we consider that any one of these non-war activities could be elements of the new kind war of the future we have to give this new kind of war that transcends boundaries and limits: “Unrestricted Warfare”<sup>4</sup>.

“Unrestricted Warfare” means that any methods can be prepared for use, information is everywhere, the battlefield is everywhere, and that any technology might be combined with any other technology, and that the boundaries between war and non-war and between military and non-military affairs has systematically broken down<sup>5</sup>. Computer

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3 *Unrestricted Warfare* Qiao Liang and Wang Xiangsui (Beijing: PLA Literature and Arts Publishing House, February 1999) pp 38 to 42.

4 *Ibid*

5 *Ibid* pp6-7

networks have greater and greater influences on world affairs. Hackers and many non-hackers wandering on the computer networks of the world act according to their own ethics they are not bound by the playing rules of society at large. They can use the web to challenge evil. One example is the eyewitness to attacks on ethnic Chinese in Indonesia by the Chinese military who broke the Suharto government's information embargo by putting a report on the web that woke up the world to these atrocities. The Indonesian military stood accused before the world. A hacker called MilwOrm as a protest against Indian atomic bomb tests broke into the India Atomic Research Center web site, changed the web page and downloaded 5 megabytes of data. A hacker might in some cases have the same impact as an atomic bomb<sup>6</sup>.

China's Unrestricted Warfare is all encompassing as it follows Sun Tzu stratagem of 'Winning without Fighting'. China will like to avoid a direct military confrontation with India, but subjugate India by other means like targeting financial institutions, economic and commercial interests, interfering with critical infrastructure, cyber-attacks, political warfare, Water and Biological wars etc. Undoubtedly, these tactics have been accepted by the Chinese government, especially, against the US ally India. Several events in the last two years have highlighted China's attempts to ravage the world's largest democracy, these include stealth appropriation of territory, skirmishes along the Sino-Indian border, several crippling cyber-attacks, the use of unorthodox weapons, including one that caused an extensive power outage in India's financial hub Mumbai, the diversion of shared water resources, and a treacherous geostrategic alliance with India's archenemy Pakistan. China is deploying both Sun Tzu's The Art of War and the PLA officers' Unrestricted Warfare as playbooks.<sup>7</sup> China in a surprise move along the LAC, resorted to violence inflicting casualties on the Indian Army troops at Galwan. Indian soldiers led by Col Santosh Babu surprised the Chinese by an immediate effective and a ferocious retaliation. The retaliation ensured has ensured a fragile peace along the LAC, as thereb has been no

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6 <https://fas.org/nuke/guide/china/doctrine/unresw1.htm>

7 <https://www.newindianexpress.com/world/2021/jul/07/china-indulging-in-unrestricted-warfare-against-india-says-report-2326748.html>

escalation since then as yet. In this skirmish, 20 Indian soldiers made the supreme sacrifice and 75 injured. It is also assessed that the PLA suffered over 40 fatal casualties. Several experts suggest that China used 'microwave weapons' against Indian troops that were effective up to a kilometer, cleverly dodging the "no live shot" rules of engagement. These mentioned this 'microwave technology' as something that heats up fluid under the skin, causing intense pain and vomiting and that resulted in Indian troops retreating after becoming violently ill.<sup>8</sup>

In American Thinker, Janet Levy also mentioned that China's attacks on all fronts are well coordinated. At the height of the border standoff, there was a 200% increase in cyber-attacks on Indian IT and banking systems over five days, with more than 40,000 attempts by Chinese hackers to install the malware in Indian networks. Chinese-sponsored groups also mounted espionage operations against India's power and transportation sector, including two ports. The grand power-cut in Mumbai in 2020 that shuttered the complete infrastructure including stopped trains, closure of the stock market, hours of power cut in hospitals amid deadly pandemic was allegedly the result of an attack by the Chinese military group RedEcho.<sup>9</sup>

In the Geostrategic space China's 'String of Pearls' aims to undermine India's interests and role in the region. Pakistan, China's all weather friend and partner will be more than willing to intensify the 'Proxy War' raising the costs for India and furthering its 'Kashmir Agenda'. China has cultivated politicians in the India's neighbourhood, employing her strategy of 'Debt Trap" and "Wolf Warrior Diplomacy' she aims to contain India and keep her tied down in the region.

The manifestations of these threats is likely in multiple spaces, impacting not only external and internal security, the plus two front war scenario, but all critical as also seemingly innocuous sectors to disrupt governance, administration, life and work of society and people. Exploiting new age technologies such as AI, unmanned systems / robotics, cyber, space, IoT, Block Chain etc both China and Pakistan

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8    ibid

9    Ibid



employing proxies or the so called non state actors can wreak havoc in our systems. After the Jan 2016 attack on India's Pathankot airbase by Pakistan based terror group Jaish-e-Mohammad, India planned to spend approximately INR 20,000 crores on strengthening the security of air bases and other administrative bases near the IB, as also earmarked another INR 30,000 crores for constructing a smart fence along the IB to enhance counter infiltration. The recent drone attack on Jammu Airforce base is a demonstration on how vulnerable our high value assets are to low cost technologies.

In addition to a collaborative threat from the Nuclear armed neighbours China and Pakistan, India will continue to face threats from state actors involving proxies, violent non-state actors who may be sub-national or transnational in origin. These state backed terrorists would employ violent acts in conjunction with civil society, NGOs or intelligentsia supported by information warfare against the people. The widespread use of social media by a large section of the population will increasingly make it a tool to target one of the pillars of national strength i.e. the will of the people. This must be seen not only as a threat which needs better policing effort but a major internal security threat. Another major security challenge is in the cyber domain and Data security, especially so as on account of 'Supply Chain Infection' as most of the IT sector is highly dependent on China manufactured and supplied hardware. Shri G. Kishan Reddy the Minister of State in the Ministry of Home affairs while replying to a question on Cyber-attack stated that "As per the information reported to and tracked by Indian Computer Emergency Response Team (CERT-In), 3,94,499 and 11,58,208 cyber security incidents have been observed during the years 2019 and 2020 respectively"<sup>10</sup>, a 300 percent increase in cyber-attacks, amounting to 132 attacks every day.

Threats to national security also emanate from terrorism in the hinterland e.g., targeting of economic and population centres, Fake Indian Currency Notes (FICN) to disrupt the economy and fund illegal activities, drug trafficking etc. Besides, Piracy, the threat to Economic Zone assets and ventures, Virtual Societal Warfare that are aimed at

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10 <http://loksabhaph.nic.in/questions/QResult15.aspx?qref=23441&lsno=17>

changing the values and behaviour pattern of society, Weaponisation of Social Media, intervention in the Education sector to degrade Indian civilization linkages, culture and beliefs<sup>11</sup>.

Chinese strategic concerns lie in the Indian Ocean region. India a peninsular nation dominates the SLOC with the strategic located Andaman and Nicobar Islands. The IOR contains thirty-six countries in sixteen time zones, more than half the world's population, and twenty-four of the thirty-six megacities on Earth, and it covers more than half the world's surface area. It is imperative that domination of the IOR be leveraged to deter China.

### **The Way Ahead**

India's national aim is to transform India into a 'Modern, Prosperous and Secure' Nation. Peace and security are a prerequisite for long term economic development and the wellbeing of 1.36 billion Indians. Also, economic development is a must for peace and stability. Whole of Government approach is required in a structured and cost effective organised way to meet and mitigate the multi domain threats.

India's security concerns must cater to the dichotomy in Chinese policy pronouncements, based on own core-interests. Chinese declared military strategy propagates 'Local Wars under Information Conditions' and such local wars are likely in China's neighbourhood. India should note that like the LAC, China is resorting to a show of force to assert its territorial claims in South China Sea and East China Sea. India should anticipate China's indulging in similar show of force to assert its border claims in Eastern Sector especially in Kameng and Doklam in Western Bhutan, at an opportune time as her main areas of interest are in this sector.

Having seen the major changes that will impact the way, wars will be fought in future, a quick look at the future operating environment and its implications for our Armed Forces is a must. In the coming decades,

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11 Lt Gen Vinod Bhatia accessed at <https://www.awazthevoice.in/newsdetail/How-prepared-India-is-to-face-non-traditional-security-challenges-2896.html>

Indian Armed Forces would have to be prepared for multi-domain battles with varying intensity and duration. These would include sub-conventional conflicts involving radicalized proxies and limited use of latest technologies to conventional conflicts of varying scale involving long duration non-contact phase, Grey Zone and hybrid warfare, under an overall nuclear overhang. Information warfare including cyber, psychological and electronic warfare resources will be increasingly employed both during peace and war. Conventional conflicts will gradually see the use of networked artificial intelligence supported stealth unmanned systems in land, sea and air domain, precision guided hypersonic weapons, long range high energy weapon systems, space based sensors and weapons, to name a few. These advanced technologies would be fielded by not only major but regional powers as well. In order to ensure that the Armed Forces are capable of operating effectively in future, we need to develop suitable joint doctrines that would enable common understanding of the operating environment and its challenges. Joint Doctrines would also guide formation of integrated force structures, training and war fighting. Without jointness at all levels from the tactical to the strategic, we cannot hope to win future wars. Issues like integrated theatres, Joint Commands and methodologies for developing joint force structures with suitable combat potential to meet both immediate threats and having futuristic capabilities, would need to be resolved at the earliest at the national & military strategic level. Another major implication of the future operating environment is the necessity to accord higher priority to information warfare and develop suitable concepts that fully utilize all its capabilities. This will enable, quickly establishing dominance over the adversary in any future conflict. Large investments would also need to be made to develop new technologies, in conjunction with the civil private industry, as most of these technologies are dual use. This will entail framing suitable policies for increasing interface with the civil industry. The Armed Forces would also have to assess the impact of new technologies especially as they would increase transparency of battlefield, precision, range & lethality of engagement. Thus, over the long term, existing manpower levels may need significant reduction so that adequate funds are available for capital acquisitions. However, we must be cognizant of the fact

that ensuring territorial integrity along the LAC and LC as also sub-conventional conflicts will continue to be manpower intensive in the coming decades. This is primarily because suitable technologies that will enable better force effectiveness with minimal collateral damage, will take considerable financial investments to be made. Battle field transparency and speed of decision making by utilizing AI will reach phenomenal levels, thus posing cognitive challenges for armed forces relying on human manned legacy systems. Unmanned systems that are autonomous with precise and intelligent targeting capability would require that own forces must be comparatively smaller in size, task oriented, highly mobile & with decentralized decision making. This will enable them to disperse and concentrate as per operational requirement. Military leadership challenges will be posed by speed of maneuvers, multiple domains in which operations will have to be conducted and 24x7 nature of operations. In the absence of contact leadership, morale of troops due to the numerous battle field challenges will also be problematic. Though the future operating environment will be highly challenging, however, the Indian Armed Forces and the nation have several times overcome serious impediments, to achieve resounding success. The Armed Forces are already seized with the issues of jointness, internal restructuring, revised manpower planning and military leadership transformation. Refining of procurement processes and building up an indigenous defence industrial base are also issues which have received careful attention. There is a need for greater participation and involvement of the political hierarchy in ensuring transformation of the Indian Armed Forces, as issues involving formulation of long term strategic military objectives, reorganization of higher defence control organization, defence budget, weapon systems procurement etc need long term strategic thinking and commitment. Issues 'military' must only be seen from an unbiased perspective, keeping national security foremost in mind.

The complexities of the future security environment demand that India be prepared to face a wide range of threats of varying levels of intensity. Success in countering these threats will require skillful integration of the core competencies of the three Services into an integrated force

structure. However, reorganisation by itself will not succeed in achieving such integration. What is also required is a change in mindset, a change that makes every soldier, sailor and air warrior feel that he is a member of the Indian Armed Forces and not just the Indian Army, the Indian Navy or the Indian Air Force. Consequently, a joint force, which acts in an integrated manner, is not just desirable but an imperative.

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