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Research article

THE STRATEGIES OF MILITARY CAPABILITY

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ABSTRACT

THE NEED TO IMPOSE CONSTRAINTS ON WAR HAS ALWAYS BEEN ONE OF THE DAUNTING CHALLENGES FACING MANKIND FROM ANCIENT TIMES TO THE CONTEMPORARY ERA. NATION-STATES IN SEEKING TO ADEQUATELY PROTECT THEIR DOMAIN EMBARK ON RIGOROUS MILITARY CAPABILITY BY SEEKING WEAPONS, EQUIPING THE MILITARY, TRAINING AND RE-TRAINING OF PERSONNEL IN ORDER TO HAVE A NATIONAL FORCE THAT IS COMBAT READY IN THE EVENTUALITY OF AGGRESSION BY A BELLIGERENT STATE.MILITARY HARDWARE OVER TIME HAVE CONTINOUSLY EXPERIENCED INCREASE IN DEVELOPMENT ESPECIALLY DURING THE COLD WAR WHEN THE SUPERPOWERS-THE US AND THE FORMER SOVIET UNION-ENGAGED IN ARMS RACE TO DEVELOP AND INCREASE THE LEVEL OF TECHNOLOGY AVAILABLE FOR MILITARY PURPOSES. WHAT DISTINGUISHES THE MODERN MILITARY ORGANIZATION FROM THOSE PREVIOUS IS NOT IN THEIR WILLINGNESS TO PREVAIL IN CONFLICT BY ANY METHOD, BUT RATHER THE TECHNOLOGICAL VARIETY OF TOOLS AND METHODS AVAILABLE TO MODERN BATTLEFIELD COMMANDERS.THE FUNDAMENTAL MOTIVATION TO SEEK WEAPON IS THE PERCEPTION THAT NATIONAL SECURITY WILL BE IMPROVED.MOST NATIONS PREFER THE POSSESSION OF NUCLEAR WEAPONS AS A SIGN OF THEIR MILITARY CAPABILITY BECAUSE THE DEVISES ARE HIGHLY DESTRUCTIVE AND CONFERS SYMBLIC STATUS. THE USAGE OF SPACE TECHNOLOGY AS A TOOL OF ENHANCING MILITARY CAPABILITY IS HIGLY SIGNIFICANT BECAUSE SPACE TECHNOLOGIES HAVE THE UTILITY IN REGARD TO REMOTE SENSING,COMMUNICATION,NAVIGATION,METEREOLOGY, EDUCATION, ASTRONOMY AND SO

ON.CONVERSELY, THESE TECHNOLOGY INHERENTLY BEEN DUAL-USED TECHNOLOGIES HAVE A MILITARY DIVERSION TOO. THE APPLICATION OF NANOTECHNOLOGY IN THE DEVELOPMENT OF WEAPONS OF WARFARE WILL FURTHER ENHANCE THE CAPABILITYOF NATIONS THAT HAVE ACCESS TOTHIS TECHNOLOGY WHICH WILL FURTHER REVOLUTIONALIZE THE MILITARY AND THEREBY FURTHER DRAWING HUMANITY TO THE BRINK OF SELF-EXTINCTION. WHILE NATIONS HAVE THE RIGHT TO EMBARK ON MILITARY CAPABILITY IN ORDER TO ENHANCE THEIR SECURITY, THE ISSUE OF ARMS CONTROL, GLOBAL WARMING AND THE IMPACT SUCH MILITARY ACQUISITION WOULD HAVE ON THE ENVIRONMENT MUST BE TAKEN INTO ADEQUATE CONSIDERATION.

KEY WORDS: MILITARY CAPABILITY, SPACE TECHNOLOGY AND ITS UTILITY, NANOTECHNOLOGY, ENVIRONMENT

INTRODUCTION

The need to impose constraints on war has always been one of the daunting challenges that have always faced mankind from the ancient times to the present contemporary era.

That man is a social being that lives in society with other human beings in communities propels the need not just to adequately secure himself and others but to collectively endeavour to protect and secure his territory is one of the major fundamental reason why nations develop a military command structure which is established to wade off external aggression and enhance internal cohesion.

Nation-States in seeking to adequately protect and secure their domain embark on rigorous military capability by seeking weapons, equipping the military, training and re-training of personnel in order to have a National Force that is combat ready in the eventuality of aggression orchestrated by a belligerent state.

While it may be argued that the development of new weapons by nation- states can dramatically alter the face of war, it must however be noted that the nature of Warfare never changes only its superficial manifestation does.

As civilization continues to evolve, weapons of warfare have metamorphosed from the use of bow and arrow through the development and use of the gunpowder to the use of armoured cars, the use of chemical and biological weapons. Military hardware over time have continuously experienced the increase in development especially during the Cold War when the Superpowers-the U.S and the former USSR- engaged in arms race to develop and increase the level of technology available for military purposes.

Both attempted to launch human beings into space. Both developed other technological advances centered on intelligence like the spy satellites and missiles (ballistic missiles, cruise missiles as well as Nuclear Submarine).

In modern times, it must be pointed out that militaries have developed technological advances rivaling the scientific accomplishments of any other field.

Modern militaries benefitted in the development of these technologies under the funding of the public, the leadership of national governments, and often in cooperation with large civilian groups.

What distinguishes modern military organization from those previous is not their willingness to prevail in conflict by any method, but rather the technological variety of tools and methods available to modern battlefield commanders from submarines to satellites, from knives to nuclear weapons.

This paper therefore attempts to discuss The Strategies of Military Capability. For the purpose of analytical convenience, the paper is divided into three parts. Part one takes a look at the strategies of military capability,

the cold war and the arms race and the rational for the arms race. Part two takes a look space technology and its utility with regard to military capability. Part three deals with Nanotechnology and then followed by the conclusion and bibliography.

THE STRATEGIES OF MILITARY CAPABILITY

The view that nation-states constitute the basic element in the international society[1] implies that nation-states differ from one another both in size and endowment which might be military and economic. As long as states pursue varied policies and national interests, they cannot but equally be the custodian of their respective national securities. And in attempting to protect their respective securities, nation-states embark on acquiring military capability.

Legally and politically, the world is divided into jurisdictions defined by state boundaries, and the highest form of authority is that of the Nation-State. Moreover, the primary political loyalty that most people have is to the nation-state, and the nation-state is the basic unit or the building block of the global system. Thus, if there is a political unit whose security needs to be guaranteed, is the nation-state[2]. From this perspective, anything that enhances the security of the nation-state is beneficial and anything that detracts from the security is harmful.

It is pertinent to note that the acquisition of military capability especially of nuclear technology by most nation-states and the Third World States is often shrouded in secrecy and deception for reasons bordering on international backlash[3].

The fundamental motivation to seek weapon is the perception that national security will be improved. Most nations prefer the possession of nuclear weapons as a sign of their military capability because the devises are highly destructive and confer symbolic status[4].

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[1]Peter Calvocoressi, World Politics Since 1945, 5th ed.(London:Longman,1990),p8.

[2]Donald M. Snow, National Security: Enduring Problems of U.S Defence Policy, (New York: St. Martin's Press.1987), p.4.

[3]C. Bassey, "Nigeria, Africa Security and The Nuclear Option: A Research Note" in Bodija Journal, No.2, June 1990, p.61.

[4]John M. Deutch, "The Nuclear Threat" in Foreign Affairs, Vol. 71, No. 4, 1992,p.125.

While attempting to corroborate the view that military capability confers status on a nation-state, Andrew Pierre aptly notes:

> the nuclear decision is likely to be made
>
> many countries for reasons quite separate
>
> from a national calculation of security requirements.
>
> These include factors of prestige, the desire to achieve
>
> Regional dominance or to catch up with another state
>
> In the area[5] .

The acquisition of military capabilities or force remains a relevant and necessary part of the world in which we live. The nature of the international system is such that nations simply cannot do without some level of military capability if they are to avoid being victimized by others. The international system largely remains characterized by anarchy under the mantle of sovereignty. And as long as sovereignty remains the system's basic organization principle, then self-help will form a prominent basis for protecting or promoting vital national interests. That means that military power will remain a necessary part of national assets[6].

The development of military capability by nation-states follows a logic which is separate from the patterns or amity and enmity among states. Although such patterns accelerate military developments, as during war, or strongly affects particular cases, as in the Anglo-German race prior to 1914, they do not fundamentally determine the

[5]Andrew Pierre, The Global Politics of Arms Sales, (Princeton: Princeton University Press, 1982), p.30.

[6]Snow, Op. Cit. , p.19.

scientific, technological and organizational imperatives which enable states to acquire military capabilities. Rather problems in state relations provide the demand which stimulates military improvements[7].

If a country's military capabilities are inadequate, it risks communicating that it is unwilling to invest the resources necessary to protect those interests. Thus, military policies that appear inadequate for deterrence or defense are thus doubly dangerous. This is because it leaves the defender vulnerable to attack and raises doubt about the defenders resolve. By contrast, adequate military capabilities avoid jeopardizing the defender's credibility, even if acquired through co-operative methods. When a defensive strategy satisfies the defender's military requirements, it also protects its credibility[8].

But traditionally, the uses into which states put their military capability have been divided into two categories. The first use is for deterrence. Hence military power is maintained to dissuade others from using military force. Presumably, nation-states do this through the use of threat. The second use to which military capability is put is for war fighting[9].

The contemporary era has witnessed the invention and the subsequent possession of nuclear weapons by nation-states. This has tended to increase the military capability of the possessing states as well as enabling them to help themselves better than other states[10]. Nuclear weapons therefore, have revolutionalized war and our perception of the use of military instrument of power[11].

The military capability of a nation-state therefore, has a political significance.

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[7]Barry Buzan, People, State and Fear: The National Security Problems in International Relations, (New Delhi: Transasis Publishers, 1983), p.158.

[8]Charles L. Glaser, "Political Consequences of Military Strategy: Expanding and Refining the Spirits and Deterrence Models" in World Politics: A Quarterly Journal of International Relations, Vol.44, No. 4, July 1992, p.509.

[9]Snow, Op. Cit. , p. 176.

[10]Robert J. Art, "The Role of Military Power in International Relations" in National Security Affairs: Theoretical Perspectives and contemporary Issues,(New York: Transaction Books,1982), p.34.

[11]Snow, Op. Cit., p. 176.

This is because military policies that are offensive and unilateral are generally considered more competitive while those that are defensive and bilateral are considered more co-operative. Hence military policies that convince the adversary that the defender is interested in expansion usually generate bad political result which decreases the adversary's security. The adversary, in order to restore its security, often adopts dangerous foreign and military policies[12].

Though, nation-states may develop their military capabilities indigenously, sometimes, they acquire military capability through arms transfer. Bruce E. Arlinghaus captures this view when he says:

> while the transfer of arms represent only one part of what has come to be generally understood as military assistance, it forms the most significant portion in terms of both expense and political influence. Increasingly, these transfers, regardless of source or means of financing, have come to shape all other aspects of military aid and assistance, since acquisition of weapons systems determines both the form and scope of military growth and modernization in recipient countries[13].

The above quotation points to the fact that military capability of a state can be bolstered through arms transfer.

The denial of the continuous relevance of states acquiring military capability will be a mirage and a wishful thinking because were the need to maintain a

[12]Glaser, Op. Cit. , p.498.

[13]Bruce E. Arlinghaus, "Linkage and Leverage in African Arms Transfer" in Bruce E. Arlinghaus(ed), Arms Transfer For Africa,(Massachusetts: Lexington Books,1983), p.3.

military force and a defense policy not universal, there would be nations in the world that did not possess armed forces, but there is hardly a nation-state that does not maintain, however minute, a military force[14].

Though, states acquire military capability in order to be able to safeguard their national interests, however, in the final analysis, a nation's military capability depends heavily on the health of its economic structure[15]. This largely lies in the fact that a nation without strong economic structure is not likely to acquire any meaningful military capability and ifit does acquire military capability despite its weak economic structure, it will reflect in the impoverishment of its citizens.

THE COLD WAR AND THE ARMS RACE

The Second World War ended with an act which contained the two central elements in the cold war: the advent of nuclear weapons and the Russo-American rivalry[16]. Karl Von Clausewitz defined war as the continuation of policy by other means. By extension, the cold war can be defined as the warfare by other (non-lethal) means[17]. Nevertheless, warfare it was and the stakes were monumental.

Geopolitically, the struggle in the first instance was for control over the Eurasian landmass and eventually, even for global preponderance[18].

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[14]Snow, Op. Cit. , p.19.

[15]Ibid., p. 17.

[16]Calvocoressi, Op. Cit. , p.2.

[17]Zbigniew Brzezinski, "The Cold War and its After Math" in Foreign Affairs, Vol. 71, No. 4, 1992, p.31.

[18]Ibid.

Although, the origins of the Soviet-American rivalry could be traced to the 1917 Bolshevik revolution, the cold war effectively began in 1947, shortly after the Second World War, when the United States introduced the Truman doctrine of containment, to check the communist expansionist policy, especially in Eastern Europe[19].

It is pertinent to note that the architects and operators of the rival cold war coalitions were of the opinion that they were elaborating structures whose foundation had been set by the heavy hand of world history. The Russians, schooled in the Marxist historical materialism, saw the two coalitions as the international expression of the inevitable worldwide conflict between the capitalists and the working classes. Western political leaders, particularly the Americans, reluctantly adopted a kind of historical determinism of their own as a rationale for their virtual abandonment of the liberal, cooperative world view which underlay their support of the United Nations system[20].

The ideological conflict that sharply characterized the cold war ideologically motivated the conception of social organizations and even of the human being itself. Not only geo-politics but philosophy- in the deepest sense of the self definition of mankind – were very much at issue[21].

The period of the cold war characterized the division of Europe into irregular segments appertaining to the two principal victors, the United States and the defunct Soviet Union. These two powers continued for a while to talk in terms of their alliance and they were specifically to collaborate in their governance of the German and Austrian territories which they and their allies had conquered. The few surviving neutrals had no impact on this developing pattern. Former Yugoslavia challenged the pattern and asserted a kind of neutralism which was

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[19]Mannix Abang Nyiam, The United Nations and The New World Order,(unpublished), M. Sc thesis submitted to the Department of Political Science, University of Ibadan, Nigeria,1991, p.74.

[20]Seyom Brown, New Forces in World Politics, (Washington: The Brookings Institution, 1974), p. 8.

[21]Calvocoressi, Op. Cit. , p.8.

supported by Nehru's India and later adopted by Nasser's Egypt, was to play an increasing role in the evolving politics of the cold war. The focus of international politics during the cold war was Europe, and the dominating event was the ultimate division of the continent by the abandonment of German unity and the creation of two new German States. Thereafter, Europe remained territorially stable and politically almost[22].

The cold war initial phase, which lasted until after Stalin's death in March 1953, depicted both super powers as being motivated more by fear than by aggressive designs, but each also perceived the other as, indeed intent on aggression.

The Kremlin government, which was headed by Stalin, was concerned then with how to keep and digest their principal war gain which was to control central Europe – while avoiding a premature collation with the ascending Western power, America.

Stalin was also convinced that the West would seek to contest his primacy in central Europe. He interpreted the Western demands for democratic election as an effort to inject a Trojan horse into his domain. Equally, during the first phase, the West also maintained a defense posture. The West condemned Soviet subjugation of Central Europe but did not contest it. Then the Berlin in 1947 was perceived as the beginning of a Soviet westward push, meant to force the West not only out of Berlin itself but also out of Germany. The Korean War was not merely minimally viewed as a diversionary offensive tactic, preliminary to the central showdown in Europe but also as part of the effort to complete the expulsion of America from the mainland of Asia and an effort to intimate Japan[23].

The death of Stalin brought this first phase of the cold war to an end. Not only were both sides ready for a respite, but the West seemed poised for an offensive. This offensive was the policy of liberation that was proclaimed by the American government. American and her allies were able to establish

[22]Brzezinski, Op. Cit. , p.31.

[23]Ibid. ,. P.36.

the North Atlantic Treaty Organization in 1949 and entrusted the organization with the task of marshalling out West Europe's defense against the Red Army of the defunct Soviet Union.

But when West Germany joined NATO in 1955, the Russians responded by establishing a military alliance and command system – the Warsaw Pact – that was considered a mirror image of NATO[24].

The second major phase, with various ups and downs including some temporary soviet set-backs, lasted almost twenty years, from the 1950s to the late 1970s. Although, there were brief periods of western tactical assertiveness as well as occasional "ceasefires', the cold war on the geostrategic level during this phase was characterized by an offensive Soviet posture. It was marked by boastful assertions of Soviet politico-military influence in the Middle East and by successive acquisition of the highly symbolic but potentially geostrategically important base in Cuba. This involved two brief but dangerous United States-Soviet confrontations, one in Berlin and the other in Cuba, both precipitated by Soviet assertiveness[25].

This phase of the cold war witnessed accelerated strategic buildup between both super powers. The Russians, being acquainted with the fact that the United States possessed nuclear weapons were not willing to remain indefinitely at the mercy of American bombers. Stalin spared no effort in achieving atomic capability and in 1949, five months after NATO was established, the Soviet Union exploded its first nuclear device. This provoked the surprise and dismay of the American government. However, Russian prowess in science, technology, engineering and weapons design was further demonstrated by the next round of the post war arms race.

In 1950, the American government reacted to the loss of its atomic monopoly by deciding, reluctantly, to press ahead with the development of a far more

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[24]william H. Mc Neill, The Pursuit of Power: Technology, Armed Force and Society Since A. D. 1000, (Chicago: University of Chicago Press, 1982), p.366.

[25]Brzezinski, Op. Cit. , p. 38.

terrible weapon, the fusion or H-bomb. The Russians kept pace, exploding their hydrogen bomb only nine months after the United States in November, 1952, had used Eniwetok atoll in the Pacific for its first experimental test of the fusion reaction[26].

Though complex in construction, hydrogen warheads could readily be made far lighter than the first clumsy Uranium and Plutonium bomb. This made rockets an obvious and preferred instrument for their delivery. No means of intercepting a speedy rocket existed, and Germany's bombardment of England by V-2s in 1944 had shown how effective such weapons could be.

The USSR invested heavily in a new navy during the 1960s as well as in rocketing and space vehicles. In all probability, military research and development in the Soviet Union more or less matched the sum allocated to the same purpose in the United States.

The Development of Spy Satellites from the 1960s onwards gave each side sure and complete access to information about the other's missile installation on land. However, satellite surveillance at once dispelled many uncertainties about Soviet missiles. This was because the satellite brought to the limelight the fact that the missile gap was mythical. The Soviets had not in fact yet invested in expensive rocket arrays poised to attack American cities, even though their capacity to do had been proved[27].

During the 1960s, therefore, each watched while the other installed inter-continental ballistic missiles (ICBMs) to match those they were themselves emplacing. Simultaneously, each power built and deployed submarines capable of lying silent beneath the sea for weeks at a time before launching atomic warheads from below the surface.

[26]Mc Neill, Op. Cit. p. 366.

[27]John Lewis Gaddis, "Containment: It's Past and Future" in Richard A. Melanson (ed), Neither Cold War nor Détente? Soviet-American Relations in the 1980s, (Virginia: University of Virginia Press, 1982), p. 3.

Clearly, by the beginning of the 1970s, substantial equality had been achieved in the sense that each power was in a position to wreck such damage on the other that building missiles seemed wasteful[28]. In other words, both super powers maintained a posture of Mutual Assured Destruction (MAD), which according to Adeniran "has long been achieved by means of long-range missiles, bombers armed with thermo-nuclear weapons, and Polaris-Trident (TRIAD)"[29].

As an attempt to curb the menace that might be precipitated by the arms race between the two superpowers, a five-year Strategic Arms Limitation Treaty (SALT) signed in 1972, accordingly set a ceiling on such weaponry. This did not however halt the arms race. Research and development teams merely shifted attention to other kinds of weapons not mentioned in the treaty for the good reason that they did not exist.

By the end of the 1970s, therefore, several weapons systems were ready to make the transition from experimental laboratories to production lines. But which weapons to build and how much of the nation's resources to commit to the escalation of the armed race remained, in 1981, a disputed matter in the United States. No doubt, similar disputes were in progress within the defunct Soviet Union, even though public airing of alternatives, such as was necessary in the United States to persuade Congress to vote funds, did not take place[30].

At this juncture, it must be noted that the arms race between two super powers encouraged nuclear proliferation. Though, the exact number of States that possessed atomic warheads or other means to deliver them remained a secret, only few states have exploded warheads in public[31].

[28]Mc Neill, Op. Cit., p. 371.

[29]See Tunde Adeniran, "Nuclear Proliferation and Black Africa: The Coming Crisis of Choice" in Third World Quarterly, Vol. 3, No. 4, October, 1981, p.675.

[30]Mc Neill, Op. Cit., p. 372.

[31]Between 16 July 1945 till date, the following states have carried out atomic explosions:USA, Russia, France, U.K, China, India, Pakistan, and North Korea. Also cf. Mc Neill, ibid. , p. 375.

But several others have been widely suspected of possessing warheads manufactured from plutonium produced in nuclear power plants[32]. Though, arms race between the two super powers dominated the second phase of the cold war; the final phase of the cold war, roughly from 1979 until 1991 was marked by the West's gradual recapture of the ideological initiative by the eruption of the philosophical and political crisis in the Soviet camp and by the final and decisive push by the United States in the arms race. This phase lasted slightly more than a decade.

The historically dramatic turnabout was precipitated by three critical cases of Soviet over-stretch. Geopolitically, the Soviet invasion of Afghanistan in December 1979, apparently taken on the assumption that the United States would not react, propelled the United States to adopt, for the first time ever during the cold war, a policy directly supporting actions aimed at killing of Soviet troops.

The Carter administration not only undertook immediately to support the Mujahedeen, but it also quietly put together, a coalition embracing Pakistan, China, Saudi Arabia, Egypt and Britain, on behalf of Afghanistan's resistance. Equally important was the American public guarantee of Pakistan's security against any major Soviet military attack, thereby creating a sanctuary for guerillas[33]. The scale and the quality of the United States support steadily expanded during the 1980s under the subsequent Reagan administration.

Furthermore, the United States qualitatively expanded its relationship with China. As early as 1980, the United States-Chinese cooperation assumed a more direct strategic dimension, with sensitive undertaking not only towards Afghanistan but also on other matters. Thus the Soviet Union faced the geopolitical menace of a counter encirclement.

[32]Adeniran, Op. Cit. , p.677. Also it must be noted that in 1979 no fewer than thirty-six countries had nuclear power plants within their borders capable of producing fissionable material. Efforts to monitor and control the use of such materials by the US and other suppliers were fragile to say the least.

[33]Bizezinski, Op. Cit. ,p. 42.

The massive United States defense buildup of the early 1980s including the decision to proceed with the Strategic Defense Initiative (SDI), both shocked the Soviets and equally strained their resources. Its scale, momentum and technological daring had been totally unexpected in Moscow[34].Inpractice SDI was intimately linked to the modernization of the very offensive weapons which it was supposed to supersede[35].

By 1983, a genuine war scare began to develop in the Kremlin, with the United States seen as bent, perhaps even on a military solution. And then by the middle of the decade, it dawned on Soviet leaders that they could neither match nor keep up with the American efforts.

The human rights campaign and the arms buildup thus became the mutually reinforcing central prongs of a United States response that not only blunted the Soviet offensive but also intensified the crisis of the Soviet political and socio-economic system itself.

The cold war eventually came to an end as a result of the domestic reforms which failed to revitalize the Soviet system but merely brought to the surface its weaknesses. Equally, the arms race had exhausted the Soviet economy, while refuting its ideological expectations. Gorbachev's willingness to tolerate what he thought would be unlimited changes in East-Central Europe in order to be able to carry out his own reforms precipitated, not the emergence of more popularly endorsed and reformist communist leadership but eventually the collapse of the Soviet system[36].

THE RATIONALE FOR THE ARMS RACE

There is the existence of a rationale for arms competition among the super

[34]Calvocoressi, Op. Cit., p. 47.

[35]Edward Reiss, The Strategic Defense Initiative (Cambridge, England:Cambridge University Press, 1992), 7.

[36]Brzezinski, Op. Cit. , p.44.

powers and other nation-states. Some scholars of international politics are of the opinion that arms race leads to war. This however, is disputable in the sense that that though arms races may result in war, not all wars are the result of arms races.

There is no evidence that arms races preceded the Russo-Japanese war(1904-1905), the Korean war (1950-1953), the Vietnam war (1967-1973) or the British-Argentine war over the Falklands (1983)[37].

Arms races may be a part of a process of competitive modernization among states seeking to preserve the status quo[38]. Each fears falling behind the others in keeping weapons technologically up to date[39]. Or it may be part of a political struggle between a status quo state and a revisionist state. In this context, the former's decision to match the latter's increase in capability sends a political message: it refuses to acquiesce in a major shift of the power balance.

The resulting arms race among states is a measure of their political rivalry. The arms race did not produce this rivalry, nor will the race end until there is some political settlement of those powers differences. The arms race in brief is a test of national will, especially on the part of the status quo power.

The rationale behind the arms race between the two super powers embarked on during the cold war stemmed from their mutual suspicion of each other's intentions as well s the uncertainties of the technological advances made by both powers[40].

Both super powers embarked on arms race not only to guarantee the security of their respective domain or spheres of influence but also not to be falling behind in terms of modern technological acquisition.

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[37]John Spanier, Games Nations Play, (India: Macmillan India, 1990), p. 352.

[38]It must be noted that both the United States and the Defunct Soviet Union engaged in arms race not only to acquire superior military technology but as well as using the arms race to preserve the status quo and each other's respective sphere of influence

[39]Spanier, Op. Cit. , p. 352.

[40]Ibid. , p. 353.

SPACE TECHNOLOGY AND ITS UTILITY WITH REGARD TO MILITARY CAPABILITY

The world is witnessing a marked increase in the usage of space technologies for military and in the post cold war era. Stephen J.Cimbala argues that military command means the responsibility and accountability of getting results, including the battlefield success or the prevention of war if the object is to deter it. In the nuclear age, it surely is the objective of super powers to deter nuclear war, probably to prevent crisis that might lead to any war between the Americans and the defunct Soviet forces to the extent possible[41]and in doing this, the use of space technology for military purposes have transformed modern day battlefield significantly.

The entire world witnessed with awe, the usage of space technologies by the US and its allied forces during the 1991 Gulf War. Subsequently, these technologies have been used with success during the Kosovo conflict and during the US invasion of Afghanistan (2001) and Iraq (2003). All these campaigns saw the intense use of space assets by the US and its allied forces[42].

Space technologies have the utility in regard to remote sensing, communication, navigation, meteorology, education, astronomy and so on. Conversely, these technologies inherently been dual-used technologies have a military dimension too. Satellites play a prominent role towards military communication and navigation. Also satellites are being used for many years for military purposes like intelligence gathering, surveillance and reconnaissance[43].

Space technology and space science involves significant financial and technological investments. The launcher technology, a technology used for

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[41]Stephen J. Cimbala, Strategic Impasse: Offence, Defense, and Deterrence Theory and Practice, (New York: Greenwood Press, 1989), p.5.

[42]Ajey Lele, Strategic Technologies For The Military: Breaking New Frontiers, (Delhi, India: Sage Publication, 2009), p. 71.

[43]Ibid

putting satellites into space is closely associated with ballistic missile technology. At the global level, the technology transfer in this area has mostly remained a selective proposal. Hence both financial and technological limitations in the field have kept many states away from this technology.

It must however, be pointed out that unfortunately international collaboration is not always a trouble free situation. Ajey Lele argues that States are forced to undertake few decisions due to geopolitical compulsions, and then there are competitions among the states. In the end, military demands of the states get precedence over other requirements. The states are not ready to share 'everything' with each other because of the inherent characteristic (dual-use) of space technology[44].

It is pertinent to note that modern military equipment is far more sophisticated and capable than equipment made a decade or more ago. This is especially true when such equipment is supported by the most modern precision-guided weapons and by area ordinance and supported by modern intelligence surveillance, and reconnaissance systems. It must be pointed out that the ability to modernize and modify older equipment is equally important, as is adequate maintenance[45].

While it is important to note that training, experience, and personal management development are critical intangibles that are hard to compare and virtually impossible to quantify, and which can differ from country to country and units to units. Countries differ strikingly in the demand they put on personal promotion and the trust and initiative given.

Also it must be noted that though weapons are instruments used to obliterate, trounce or harm an enemy, since time immemorial human race has been

[44]Ibid.

[45]Anthony H. Cordesman, Arab-Israeli Military Forces in an Era of Asymmetric War, (Westport, Conn: Praeger Security, 2006), P.22.

involved in designing and developing various types of weapons for such purposes. Anything that is capable of causing damage, even psychological one to the enemy could be called a weapon. All weapons are non lethal and there exists a separate category of non-lethal weapon[46].

Weapons systems are normally classified based on these facets: (a) who uses it, (b) what the target is, and (c) how it works. The categorization is also subject to the combat environment, in which the weapon or its platform is used. It could be land, water, atmosphere or space. The launch platform and the environment dictate facets of weapon designing. What it targets, refers to what type of target the weapon is designed to attack, that is whether weapon is anti-aircraft, anti-ship or anti-submarine. How it works, refers to the construction of the weapon and its operating procedure, that is, whether it is a biological, chemical or energy weapon[47].

It is pertinent to observe that modern day weapons use various forms of energy. All their lethality, say from nuclear energy to kinetic energy. A new breed of weaponry called DEW is expected to revolutionalize the 21st century, perhaps in a similar way nuclear weapons brought a revolution during World War II and the period thereafter.

Such weapons could be further categorized as laser, high-powered microwaves and partial beams. As Dong Beason posits, these are capable of preventing an enemy from conducting operations, either by destroying the targets or by stopping the enemy[48]. These weapons damage the target with electromagnetic power. However, a few of such weapons are available with developed militaries and many are under development/ conceptualization.

All this however, in any way does not remove the fact that part of mode of modern military warfare is the possibility of strategic information warfare

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[46]Ajey Lele, Op. Cit. , p.71.

[47]ibid.

[48]Dong Beason, The E-Bomb, (Cambridge: Da Capo Press, 2005), p.214.

as a new means by which international actors may wage war by directly attacking an adversary's information infrastructure[49].

Furthermore, in terms of states acquiring military capability, each state must choose whether to try and modernize its military forces in ways that will allow them to match some of the advances in conventional forces that make the revolution in military affairs, a challenge that requires both massive new investments and major improvements in training and manpower quality. The changes in the very nature of warfare that were demonstrated in the Gulf War of 1990/91 and demonstrated even more clearly in Iraq's defeat in 2003, force a rate of military change that goes far beyond traditional arms race that nations engage in to acquire military capability[50].

NANOTECHNOLOGY

Nanotechnology is an emerging science of the 21st Century that concerns itself with the engineering of materials at the scale of the individual atoms and molecules. Nanophase materials, as they are sometimes called will often display novel properties because of the very precise way in which their component particles have been arranged or shaped[51].

Nanotechnology has two different but important meanings. One is a broad, stretched version meaning any technology dealing with something less than 100 nanometers in size. The other is the original meaning- designing and building machines in which every atom and chemical bond is specified precisely.

It is pertinent to observe that the application of Nanotechnology in the development of weapons of warfare will further enhance the military capability of nations that have access to this technology. It will further revolutionalize the military and thereby further drawing humanity to the brink of self-extinction.

[49]Gregory J. Rattray, Strategic Warfare in Cyberspace,(Cambridge, Mass: MIT Press, 2001), p. 2.

[50]Anthony H. Cordesman, Op. Cit. , p.3.

[51]John Robert Marlow, "Understanding Nanotechnology",http//www.scifid ensions.com/may04/digital.

In the 21st Century, for the induction of any military technology, it is important to address two specific issues- arms control and likely environmental damages that such technology may cause. Issues related to the environment and global warming do not strictly form a part of the global discourse on defense but are extremely important and capable of stalling induction of any new technology in defense. It is extremely important to have knowledge about the environmental concerns in regard to military technologies and the price involved in the acquisition of military capability.

CONCLUSION

We have attempted in this paper to critically discuss the strategies of military capability. In carrying out this task, moderate attempts were made to discuss how nations embark on military capability, the arms race and the rationale for the arms race. We also looked at space technology and its utility with regard to military capability while also looking at the emerging Nanotechnology and its ability to completely overhaul military technologies with the designing of far greater weapons of accurate precision.

It must however be pointed out that as long as states remain the building block of the international system, states will continue to embark on the acquisition of military capability because of the need to secure and enhance their respective national securities and also to further their respective national interests. A state that is unwillingly to expend finances on her military capability becomes vulnerable to external aggression because by refusing to enhance her defense, a wrong signal is sent to the outside world that she is unwillingly to defend her territory and national interest.

While nations have the right to embark on military capability in order to enhance their respective securities, the issues of arms control, global warming and the impact such military acquisition would have on the environment must be taken into adequate consideration. This is because while a lot of progress is being made by the advanced nations in military technology, the negative impact of such on humanity and the consequences emanating from such leaves humanity vulnerable and on the brink of self-extinction.

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