The Missing Link in Joint Warfare Practices: A Conceptual Analysis of Military Transformation

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Abstract— *Military services have over the years been far more likely to resist cooperation, and this reality has been expressed in the analysis of strategic thought. Although some critics discussed amphibious warfare and the specific linkages between naval power and land power, eminent strategists such as Clausewitz vehemently ignored naval warfare. Mahen paid only passing attention to the employment of sea power against the land power. Similarly Douhet strongly suggested that air power should be operated independently of other dimensions of war. Joint warfare is arguably a late twentieth century, if not twenty-first century phenomenon. Until the 1986 Goldwater − Nichols Act was passed in the United States inter-service harmony among the tri services was not possible and conducting a "seamless" three-dimensional war was an uphill battle. This revolution in military affairs (RMA) significantly altered the nature of warfare brought by the innovative application of technologies. Combined with dramatic insights in military doctrine and operational concepts, such innovations have fundamentally changed the character and conduct of military operations. The phenomenon of military transformation emphasized by the Post Cold War strategists seems to revolve around four tenets. First, the operations of the three military components -- army, navy and air force − must be fully interoperable in practical and technological terms. Second, rather than the traditional military operation which was confined to a single service, the joint effort must involve contributions of two or more services. Third, the integration of service capabilities into a joint framework does enhance the friendly force battlespace awareness. Final, the battlefield mission should be assigned not according to service but according to the requirement. However, the post Cold War strategic thought has hardly addressed the impact of intercultural harmony on successful network-centric warfare operations. Critics believe that the cultural differences among the army, navy and airforce have often diluted the interoperability of the three. In particular the higher echelons of the three forces argue that the poor cultural collaboration among them during the 2009 internal war in Sri Lanka did handicap the expected levels of joint operability. This paper suggests that without reconciling the frictions among the values, beliefs and assumptions of the three forces engaged in warfare, a successful military transformation would be a forlorn hope. Also, the paper conceptualizes that the formation of a common social glue which unifies the three forces into a compatible network would be a fifth tenet for successful military transformation. The paper is four-fold. Part one is introductory and it deals with a comprehensive literature survey on military transformation. A conceptual model linking the five tenets of joint warfare will be explained in part two. Part three illustrates how the cultural harmony will enhance the jointness in practice. The final part will be devoted for concluding remarks.*

Keywords— Military transformation, Cultural harmony, Conceptual remarks

I. INTRODUCTION

The phenomenon of joint operations among the sea, land and air forces on the battlefield is not a new one, and Europeans were the pioneers who thought about cooperation between sea and land forces as early as the seventeenth century. The jointness at that time was limited to landing ground troops some distance from the homeland and then resupplying them by the navy. Americans applied the joint operations for the first time during the civil war, with seaborne attacks on the ground targets and the landing of naval forces. The value and influence of joint warfare became most significant during World War One when the Dardanelles campaign became unsuccessful mainly because of a lack of cooperation between the British navy and army. Two decades, later Germany's lightning war, or blitzkrieg, tactics used in the beginning of World War Two clearly revealed the power and potential of unifying air and land forces (Sloan, 2012). The

United States subsequently conducted joint operations in the pacific while the invasion of Normandy represented the most complex joint operation of the war.

II. THE LITERATURE REVIEW

The historical records reveal that military services have far more likely to resist joint operations, and this reality has been highlighted in the longitudinal analysis of the content of strategic thought (Sloan, 2012). Originally Jomini discussed amphibious warfare, Corbett attempted to illustrate the possible linkages between land and naval power, and Clausewitz openly ignored the importance of naval warfare. Mahen passingly acknowledged the employment of naval troops against the land while Douhet took a very different standpoint and argued that airpower should operate independently of other forces of war. Critics argue that even the tactical brilliance of blitzkrieg was not followed by any substantial body of thought on joint operations (Cohen, 1996). The peak level of cooperation among the services in warfare evidenced in the late stages of World War Two was not seen again until the 1991 Gulf War (Murray, 2002:35). Critics argue that joint warfare can truly be considered as a late twentieth century phenomenon. As a result of advances in civilian information technologies which spilled over into the realm of the military technology in the 1970s, it became quite desirable and possible for the three forces to be integrated into a "seamless" three dimensional warfare. Sloan (2012:49) suggested that contemporary strategic thought on joint warfare which was first enunciated in the late 1980s was adopted only in the closing days of the Cold War. In the case of the United States a specific legislation was required to promote cooperation and reduce inter-service rivalry. Joint ideas were later picked up and presented as part of 1990s thinking about a revolution in Military Affairs (RMA), later called as Military Transformation. Military Transformation as a part of the strategic thought of the United States was first implemented during the 2001-2 Afghanistan War and Iraqi War in 2003. Krepinenich (1994) introduced the first US assessment of RMA and suggested that a military revolution could occur when some dominant technological change in warfare is combined with operational (or doctrinal) innovation and organizational adaptation. He later elaborated that the new circumstances could be revolutionary if they produced a dramatic change by "an order of magnitude" in the combat potential and military effectiveness of a military force. As illustrated in box 1, there had been as many as ten revolutions in military affairs over the years which contributed to the development of military transformation.

Box 1

In 1993 the Pentogon's Office of Net Assesment defined a RMA as " a major challenge in the nature of warfare brought about by the innovative application of technologies which, combined with dramatic changes in military doctrine and operational and organizational concepts, fundamentally alters the character and conduct of military operations." By this definition, it is possible to identify at least ten military revolutions since the fourteenth century:

- The Infantry Revolution, where longbow technology and accompanying tactical innovations enabled infantry to displace cavalry as the dominant force on the battlefield;
- The Artillery Revolution, in which longer gun barrels, metallurgical break-throughs, and changes in the form of gunpowder made artillery more powerful and cheaper, and accompanying organization changes in siege warfare forced defenders to abandon their castles;
- The Revolution of Sail and Shot, in which ships moved from oar-driven to sail-propelled power, enabling them to mount heavy cannons and transforming warships from floating garrisons of soldiers to artillery platforms;
- The Fortress Revolution, involving lower, thicker walls that rendered artillery less effective and moved the advantage to the defense;
- The Gunpowder Revolution, in which the technological innovation of musket fire was combined with a doctrinal change to linear (vice aquare) tactics;
- The Napoleonic Revolution, where the industrial revolution and the mass production of weapons enabled the lev'ee en masse, that is the quantum leap in the size of field armies;
- The Land Warfare Revolution, in which new civilian technologies like the railway and telegraph greatly enhanced strategic mobility, enabling military commanders to sustain large armies in the field and coordinate widely dispersed operations;
- The Naval Revolution, wherein sail gave way to steam power, and ships moved from being wooden to iron clad, leading to heavier and bigger

battleships and guns, and new tactics away from broadside artillery mounts;

- The Interwar Revolution in Mechanization, Aviation and Information prompted by technological advances in mechanization and radio that ultimately enabled German's blitzkrieg tactics of joint operations involving aviation and mechanized forces; and
- The Nuclear Revolution of nuclear weapons, which prompted significant doctrinal theorizing and, once coupled with ballistic missiles also led to the creation of new organizations within the militaries of the superpowers.

See Andrew F.Krepinevich, "Cavalry to Computer: The Pattern of Military Revolutions," National Interest (Fall 1994).

At the same time other analysts were more specific in their meaning of "fundamentally alter." Thinkers at the US Center for Strategic Studies identified a MTR or RMA as a "fundamental advance in technology, doctrine or organization" that renders existing methods of conducting warfare obsolete (Mazarr, 1993). RAND corporation similarly stressed that a RMA involved a paradigm shift in the nature and conduct of military operations that "rendered obsolete or irrelevant one or more core competencies of a dominant player (Hundley, 1991:9)." Krepinevich himself argued in his initial MTR assessment that change would be revolutionary if at some point the cumulative effects of technological advances and military innovation invalidated former conceptual frameworks (2002 : 3). If, for example advances in stand-off precision strike were to invalidate or render obsolete the former military advantage in having massive formations of even the best tanks, then this could be considered revolutionary (Sloan, 2012).

It is argued that the full realization of a RMA, MTR and military transformation required three prongs of technological innovation, (doctrinal or operational innovation) and organizational innovation. Pentagon's Office of Net Assessment (ONA) later replaced the term MTR with that of RMA specifically to highlight the imperative of going beyond technology.

Andrew Marshall (1995-96:81) underlined that the critical factor in past RMAs (for example blitzkireg) was "not technological surprise but the adoption of innovative operational concepts and organizations to exploit commonly available systems." A "true

RMA", one US Army War College scholar, Blank (1996:17) argued "transcended technology, engendering changer in organization, doctrine and strategy." All of these critics suggested that the transformation process should promote the jointness in operations. In 2003 the newly created office of Force Transformation in the Pentagon defined transformation as a process that shapes the changing nature of competition and cooperation through combinations of concepts, capabilities, people and organizations that exploit our nation's advantages and protect against asymmetric vulneratilities (Sloan, 2012). The common theme underlined in these comments is the imperative of pursuing and implementing technologies and doctrines that would ultimately bring to fruition a situation of true jointness in operations.

Strategic thought pertaining to joint theory in the first two decades following the end of Cold War was closely linked to overarching conceptions of the changing nature of warfare. With the influence of civilian world's information revolution, these broad conceptions progressively included the MTR, the RMA and military transformation. It seems that many attributes included as part of each of these phenomena varied by thinker, and there was inevitably a significant degree of overlap. In several cases only the title was different not the main conceptualizations. Some of the dominant warfare characteristics repeatedly recurred in the discussions whether the phenomenon was MTR, RMA, parallel war, system of systems, military transformation or NCW (network centric warfare). However, very clearly their stated objective was jointness in warfare.

A. Towards a Conceptual Framework for Military Transformation

Post-Cold War strategic thought relevant to the phenomenon of military transformation mainly addressed the importance of joint theory based on a three pronged framework unifying technological innovation, operational or doctrinal innovation and organizational innovation. Many eminent theorists and practitioners equally emphasized the significance of cooperation among the land, sea, and space forces to conduct a "seamless" three dimensional war. Mostly their theorizing embarked on the integration of technological and doctrinal perspectives, however. The relevance and centrality of organizational variables in promoting the inter

troop cooperation at the battlefield were not addressed adequately.

The conceptual underpinnings of the joint theory at large, revolves around four tenets. First the critics tend to agree that the three military components- army, navy and space forces must be fully interoperable in practical and technological terms. All the theorists underline the importance of technological innovation. Second, they unanimously argue that the joint theory must deviate from the traditional military assigning which was confined to a single service and expect contributions of two or more services. This tenet postulates that engagement in war with the involvement of single force does not come under the phenomenon of jointness. Third the framework suggests that the integration of service capabilities into a joint network does enhance the friendly force battlespace awareness. This tenet underlines the importance of sharing the knowledge and understanding of the common parameters of the "system of systems". Fourth, the joint theorists argue that the mission of the battlefield should be assigned not according to service but according to the requirement regardless of which service fulfils it. It is argued here that none of these four conceptual underpinnings have addressed directly the importance of the organizational dimension in military transformation. While the third and final tenets indirectly addressed the role of organizational attributes in linking the land, sea, air and space forces into a joint effort. However, organizational innovation enhances the jointness among the three forces working together in a battlefield and facilitates the effectiveness of the cooperative effort.

Sloan (2010) addressing the dynamic role played by organizational innovation in transformation suggests that organizational innovations centered on creating agile, maneuverable forces which in turn could be translated into units that were more tailorale to a specific task at hand would strengthen the jointness. Apparently Sloan goes beyond the third and fourth tenets specified in the conceptual framework. In particular, this paper suggests that a fifth tenet which primarily deals with organizational culture should be added to the conceptual model. The fifth tenet proposes that a common organizational innovation should be adopted and developed in order to strengthen the behaviour of troops in general. It is argued here that the common culture usually encompasses the dynamics of organizational innovation.

Figure 1: Illustrates how the five tenets interact with each other and facilitate the jointness among the three forces in the battlefield and promote the transformation process. The conceptual framework is supported by the following five hypotheses:

Hypothesis 1: Successful military transformation is dependent upon the interoperability of technology adopted in navy, army and air and space forces (IT)

Hypothesis 2: Successful military transformation is dependent upon the involvement and integration of multiple forces (two or more) (MF) in the battlefield.

Hypothesis 3: Successful military transformation is dependent upon the way its mission is assigned. It argues that the mission should be assigned in view of the requirement (RM) but not in view of the service.

Hypothesis 4: Successful military transformation is dependent upon the level of integration of service capabilities in the battlefield (IS).

Hypothesis 5: Successful military transformation is dependent upon the level of cultural collaboration (CC) among the three forces.

Various suggestions made by military officers and academics over the past two decades directly supports the basic model presented here. (Cebrowski and Gartska, 1998; Cohen, 1996; Marshall, 1993; Riper and Scales, 1997).The fifth hypothesis proposed here suggests that the inter-cultural harmony among the three services is fundamental for friendly battlespace awareness and collaborative behaviour. The literature on organizational behaviour argues that common values, beliefs and assumptions of the groups involved positively support the acculturation process among the participants.
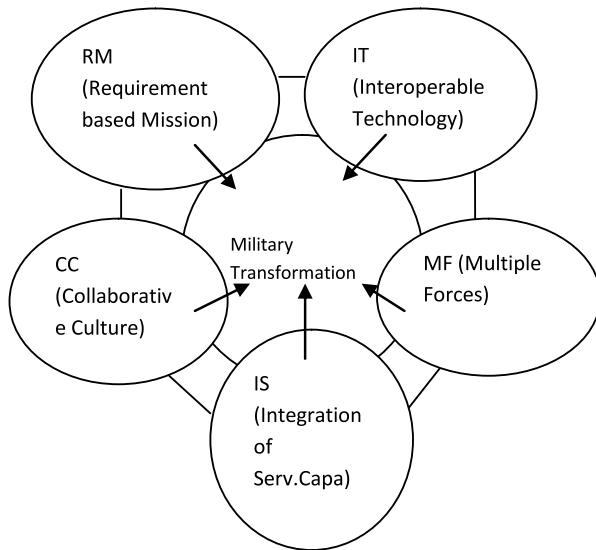
Figure 1: Five Tenets Involved in Successful Military Transformation

Critics believe that the cultural differences among the army, navy and airforce have downplayed the interoperability of the three in the battlefield. Also the behavioural scientists suggest that without reconciling the frictions among the values, beliefs and assumptions of the three forces fighting together in the battlefield, a successful military transformation would be a forlorn hope.

III. CONCLUSIONS AND WAY FORWARD

The proposed theoretical model on military transformation added a new component to enrich the existing strategic thought. It argued that the development of a cohesive culture would serve as a social glue to strengthen the cooperation among the three forces in the battlefield.

The paper further proposes that the theoretical underpinnings of the model should be tested through an empirical study involving a sample of higher echelons of military services who have served jointly in the battlefield. A comprehensive survey which addresses the dynamics of interactions among the three forces will be instrumental in illustrating the rich adaptive scenarios of the joint operations at large.

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