Air Power and East Asia:
Awakening from Strategic Hibernation

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1. The Strategic Awakening of East Asia

For more than two centuries, a succession of Western powers—Europe's great powers until World War II, Russia until the collapse of the Soviet Union, and the United State since the end of the Second World War—have dominated the global strategic landscape owing principally to their economic prowess and corresponding military power. This strategic dominance was contested periodically by a limited number of East Asian states most noticeably by Japan in the early 1900s and more forcefully during the Second World War, by North Korea and China during the Korean conflict, and by North Vietnam from the 1950s until victory in 1975. But despite the stalemate in Korea and the subsequent U.S. withdrawal from Vietnam, no East Asian power has been able to displace, much less match, the cumulative power projection capability of the United States. Such a state of events is unlikely to change for the foreseeable future but the catch is that within the next two to three decades, the "foreseeable future" will transform into "current reality."

While the emergence of an East Asian theater peer that could conceivably contest the strategic supremacy of the United States (or that of its key allies) seems highly unlikely at least until the 2020 or so time frame, the potential emergence of a *near* theater peer within the foreseeable future no longer lies in the realm of war games. In essence, East Asia on the whole, and selective actors in particular such as China, India, Japan, and to a lesser degree Korea, is awakening from *strategic hibernation* that could have far-reaching consequences not only for the region, but for global security and prosperity. The cumulative rise of East Asia—unparalleled economic and technological capabilities coupled with progressively advancing power projection capabilities—has no parallel in East Asian history. Ever since East Asia was forced into the modern international system following the Opium War in the

mid-19th century, only one regional power, Japan, acquired and then subsequently lost regional strategic presence. Assuming that current economic, military, and political trends continue, however, East Asia by the year 2020 is likely to harbor at least three states with significant strategic capabilities—China, Japan, and possibly a unified Korea. If one factors in India, major power rivalries—latent, muted, or real—may well come to characterize East Asia's strategic landscape in the second half of the 21st century.

Great powers seldom, if ever, emerge by accident. The confluence of focused national strategies, economic and technological capabilities, accelerated maturation of soft power attributes, and sustained political will among other forces culminates in the creation of strategic capabilities. The East Asian story since 1945 differs substantially from the rise of previous great powers, e.g., the concert of European powers from the late 18th until the late 19th century, in that hard and soft power attributes have been compressed at an accelerated rate to create a commanding synergy. If a select number of East Asian states have spent the last 50 years accumulating and expanding national capabilities, including more modernized military potential, they are likely to spend the next 50 years honing, refining, and ultimately using their newly gained national capabilities. This is not to suggest that Western and in particular American dominance of advanced military technologies will ebb anytime in the near future. Indeed, in areas such as direct-energy weapons, high-power microwaves, unmanned combat air vehicles, and biocomputers U.S. dominance can be fully expected to expand.[1] That said, selective progress in asymmetrical technologies coupled with immense dual-use opportunities offered by the on-going information revolution will be exploited fully by China, Japan, Korea, India, and even selective Southeast Asian states.

It is in this context that more and more East Asian states are turning their attention to acquiring more expansive power projection capabilities in general and airspace capabilities in particular. As a case in point, despite the propensity to downgrade the strategic utility of North Korea's missile forces, one should really look into the speed in which Pyongyang has acquired over 500

[1] For a concise and lucid treatment of emerging military technologies and U.S. advantages, see William C. Martel, ed., *The Technological Arsenal: Emerging Defense Capabilities*, (Washington, D.C.: The Smithsonian Institution, 2001).

surface-to-surface missiles including the longer-range Taepodong-1. To be sure, the debate continues on the net military utility of North Korean missiles given limited accuracy and payload constraints. Nonetheless, the fact remains that North Korea has chosen to expand its strategic envelope with significant implications for South Korean, Japanese, and U.S. forces based on the peninsula and in Japan.

Air power in and of itself has never translated into decisive strategic presence. But in combination with a broader array of power projection capabilities such as ballistic and cruise missiles, precision targeting capabilities, and precision guided munitions, they can provide virtually any state with potent projection capabilities. For reasons that are illustrated below, selective East Asian states today have already acquired or are in the process of acquiring more lethal weapons platforms than at any time since the end of the Korean War. Ironically, such a development stems, in part, from the very success of the postwar economic recovery of East Asia since regional states have the financial ability to modernize their armed forces. More importantly, with the exception of the Korean Peninsula where large-scale ground forces continue to confront each other over the DMZ, the specter of all-out attrition warfare has declined significantly with the global end of the Cold War. Thus, the need for large, ground-based mechanized forces with fixed artilleries has declined substantially with corresponding emphases on air and naval power projection capabilities. Indeed, notwithstanding the current limitations of China's space program, "increased space capability is the only way for the Chinese armed forces to catch up with the current revolution in military affairs and information technology. China's increased focus on its space program is coupled with plans to redesign the People's Liberation Army into a modern, efficient, high-tech fighting force."[2] At the same time, although it is highly unlikely that China will overtake the United States in military space even over the next 20-30 years, "it has the potential to develop within this time frame a military space capability that the U.S. military would have to reckon with."[3]

[2] "China's Long March Into Space," *Stratfor.com*, January 10, 2001, www/stratfor.com/asia/commentary-/0101101950.html
[3] Ibid.

Insofar as Japan's military capabilities are concerned, *Stratfor.com* issued a special report in May 2001 that characterized Japan as being in a strategic turning point and further that "creating a credible Japanese military deterrent in East Asia—after more than half a century of isolationism—will place Tokyo at the center of competition for influence in the region. *More than those by the United States or China, Japan's moves will intensify an already heated competition for regional influence*."[4] (Emphasis added). Last but not least, South Korea's own space program coupled with the agreement reached in January 2001 enabling Seoul to deploy SSMs up to a range of 300 km with conventional payloads up to 500 kg (in return for South Korea's entry into the MTCR) "*will spur commercial competition and may trigger increased regional missile proliferation*" and further, that "South Korea seeks technological and economic benefits from a purely indigenous space program, one that could eventually defend the entire peninsula while decreasing economic and security dependency on the United States."[5] (Emphasis added).

In the final analysis, these assessments may or may not accurately depict the future direction of Chinese, Japanese, or Korean strategic priorities. But the more relevant point is that insofar as *capabilities* are concerned—quite apart from *intent*—all three states possess fairly robust offensive military arsenals that could be enhanced significantly in the years and decades ahead. To be sure, despite outstanding political and historical constraints, the possibility of any direct military clash between South Korea and Japan remain virtually nil—in large part owing to Tokyo's and Seoul's half century alliances with the United States. Indeed, while Japan remains concerned on the potential shift in South Korea's strategic calculus, e.g., weakened strategic ties with the United States with correspondingly closer ties with China in the post-unified era, a Korea under a Chinese security umbrella would face enormous constraints with potentially debilitating consequences as evinced by Korea's loss of strategic independence owing to its forced status as a tributary state. For different

[4] "Will Japan Re-Arm?,"May 28, 2001, *Stratfor.com*, January 10, 2001, www/stratfor.com/asia/commen-tary/0105282155.html

[5] "Unintended Consequences: Proliferation in South Korea," *Stratfor.com*, March 5, 2001, www/stratfor.-com/asia/commentary/0103051130.html

historical, political, and strategic reasons, however, all three key Northeast Asian states are pursuing force modernization programs that will ultimately drive and shape the regional strategic template: China, in order to regain and reassert its historical geopolitical role; Japan, in an effort to overcome the limitations posed by the Yoshida Doctrine; and Korea, in order to offset any major spill-over from great power rivalries or clashes. It is perhaps for these reasons that airspace and naval assets are fast becoming the platforms of choice for China, Japan, and Korea.

2. Air Power, Strategic Jointness and Hybrid Conflicts

While the use of air power in strategic theaters dates back to the Second World War, the never ending debate on whether air power is a decisive factor in modern warfare largely rests on the fact that "seventy years of over promising by air power advocates had left a deep residue of distrust in Washington's military culture" and that "because air power was thought to have failed in Indochina in some very general sense and because it was not deemed to have been 'decisive' in either the Korean War or the Second World War" many argued that air power prior to U.S. and allied air offenses against Iraq during the Gulf War would also fail.[6] Before assessing in greater detail key developments in air power since the Gulf War, it is perhaps necessary to briefly articulate what one means by air power as noted by a leading air power analyst:

> First, air power does not refer merely to combat aircraft or to the combined hardware assets of an air arm, even though these may seem at times to be the predominant images of it held by both laymen and professionals alike. Rather, *in its totality, air power is a complex amalgam of hardware equities and less tangible but equally important ingredients bearing on its effectiveness*, such as employment doctrine, concepts of operations, training, tactics, proficiency, leadership, adaptability, and practical experience.

[6] Edward N. Luttwak, "Air Power in U.S. Military Strategy," in Richard H. Shultz, Jr., and Robert L. Pfaltzgraff, Jr., eds., *The Future of Air Power in the Aftermath of the Gulf War*, (Maxwell Air Force Base, Alabama: Air University Press, 1992), p. 20.

Second, *air power is functionally inseparable from battlespace information and intelligence*…Air power and intelligence are thus opposite sides of the same coin. If the latter fails, the former is likely to fail also. For that reason, accurate, timely, and comprehensive information about an enemy and his military assets is not only a crucial enabler for allowing air power to produce pivotal results in joint warfare; it is an indispensable precondition for ensuring such results.

Third, *air power, properly understood, knows no color or uniform*. It embraces not only Air Force air craft, munitions, sensors, and other capabilities, but also naval aviation and the attack helicopters and battlefield missiles of land forces…*Recognition and acceptance of the fact that air warfare is an activity in which all services have important roles to play is a necessary first step toward a proper understanding and assimilation of air power's changing role in joint warfare*.[7] (Italics added).

If one understands air power in these terms, a critical dimension of air power is its inherent flexibility—in strategic, operational, and tactical terms. As defined in current U.S. joint doctrine, the strategic level of warfare is "that level at which a nation or coalition determines security objectives and guidance…Operational art governs the organization, deployment, integration, and conduct of major campaigns and operations. Proper leadership at this level guides the direction and coordination of tactical forces within the theater. Tactical doctrine (tactics) provides detailed guidance to combat units for winning individual engagements."[8] In the context of air power, Glenn A. Kent and David A. Ochmanek at RAND emphasize the concept of core competency, "that is, the core competency of air and space forces—their ability to traverse air and space—gives them inherent characteristics of speed, range, mobility, and perspective. These inherent characteristics, in turn, make it possible for air and space forces to possess the fundamental capabilities of projection, responsiveness, maneuver,

[7] Ibid., pp. 117-118.
[8] Major Scott Walker, USAF, "A Unified Theory of Coercive Airpower," *Airpower Journal*, vol. 11, no. 2 (Summer 1997), www.airpower.maxwell.af.mil/airchronicles/aphj/sum97/sum97.html

mass, and situation awareness."[9] Or as *Joint Vision 2020* highlights with respect to achieving full spectrum dominance:

For the joint force of the future, this goal will be achieved through full spectrum dominance – the ability of US forces, operating unilaterally or in combination with multinational and interagency partners, to defeat any adversary and control any situation across the full range of military operations.

The full range of operations includes maintaining a posture of strategic deterrence. It includes theater engagement and presence activities. It includes conflict involving employment of strategic forces and weapons of mass destruction, major theater wars, regional conflicts, and smaller-scale contingencies. It also includes those ambiguous situations residing between peace and war, such as peacekeeping and peace enforcement operations, as well as noncombat humanitarian relief operations and support to domestic authorities.

The label full spectrum dominance implies that US forces are able to conduct prompt, sustained, and synchronized operations with combinations of forces tailored to specific situations and with access to and freedom to operate in all domains – space, sea, land, air, and information.

Achieving full spectrum dominance means the joint force will fulfill its primary purpose – victory in war, as well as achieving success across the full range of operations, but it does not mean that we will win without cost or difficulty. Conflict results in casualties despite our best efforts to minimize them, and will continue to do so when the force has achieved full spectrum dominance.[10]

To the extent that jointness is a crucial component of maximizing the advantages inherent in air power, it must also be mentioned that outside of the

[9] Glenn A. Kent and David A. Ochman e k, *Defining the Role of Airpower in Joint Missions,* (Santa Monica, CA: RAND, MR-927-AF, 1998), pp. 11-12.
[10] *Joint Vision* 2020, (Washington, D.C.: Joint Chiefs of Staff, 2000), www.dtic.mil/jv2020/jvpub2.htm

U.S. military, only a very limited number of militaries actually practice jointness. (As is well known, however, consensus remains relatively thin even within the U.S. armed forces as to what precisely defines jointness, and more importantly, which service should be in the lead vis-à-vis the forging of greater jointness). Nevertheless, the key point here is to illustrate the critical importance of thinking about air power in a holistic framework and not in a service-parochial manner. Thus, insofar as air power is concerned, it must be conceptualized within the broader context of the use of force, or more precisely, to understand that "although air power gives us new avenues of approach and ways to avoid most of the enemy surface forces en route to a target, the question of what we are trying to get the enemy to do (or stop doing) remains the same."[11]

More recently, the debate on the role and efficacy of air power[12] has once again been ignited on the heels of the unparalleled usage of and success in precision bombing against the Taliban and Al Qaeda militias in Afghanistan. According to Army Gen. Tommy Franks, the Commander-in-Chief of U.S. Central Command, "the Taliban…no longer controls Afghanistan, Al Qaeda cells inside Afghanistan have in some cases been destroyed, in other cases disrupted, and in fact, Al Qaeda is on the run."[13] The overall degree to which air power contributed to the military demise of the Taliban and Al Qaeda will be studied intensively once the Afghanistan campaign draws to a close but initial evidence suggests strongly that air superiority, precision bombing, real-time intelligence, and close air support were decisive factors in defeating the 45,000 strong Taliban forces and thousands of Al Qaeda militia forces 90 days after the beginning of military operations in early October.

While the matching of highly tailored forces with multiple mission requirements is not new (as shown by the Gulf War and the Kosovo campaign), one of the most significant military aspects of the Afghanistan campaign is the

[11] Walker, "A Unified Theory of Coercive Airpower."

[12] An increasing number of analysts prefer to use the term "airspace power" or "aerospace power" rather than "air power" but "air power" is used in this paper in the context of air and space power including, but not limited to combat and non-combat aircraft, ballistic and cruise missiles, UAVs and UCAVs, and space-based platforms. The terms "airspace power" and "air power" are used together in this paper.

[13] Jim Garamone, "Central Command Chief Please with Afghan Progress," *American Forces Press Service*, January 4, 2002. www.defenselink.mil/news/Jan2002/-n01042002_200201045.html

ability of the U.S. armed forces to effectively operationalize a "system of systems" that ties together emerging technologies and RMA assets, unparalleled C 4 ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) capabilities, and unmatched precision fire power. As one commentator has noted, Operation Enduring Freedom is likely to be remembered as a key benchmark campaign or as the first campaign where air power reached "critical mass."[14] In more ways than one, unparalleled *Jointness* led by air assets in the Afghanistan campaign can be seen as the decisive factor in destroying the Taliban and Al Qaeda forces.

Notwithstanding the initial success of the combined air/special forces/marines campaign in Afghanistan and the critical role of precision bombing, the more significant issue is how the on-going war in Afghanistan is likely to influence the conduct of future conflicts—-both from the warriors and policymakers perspectives. Proponents of air power have argued ever since the Gulf War, and more recently, in the aftermath of the 1999 Kosovo campaign, that air power demonstrated its ability to decimate enemy forces with minimum casualties to U.S. and allied forces. There is little doubt that the modus operandi of warfare has changed significantly, perhaps even fundamentally, with the advent of long-range strikes utilizing precision munitions combined with new information technologies that enables commanders and front line troops with "24/7" situational awareness.[15] As one enthusiastic analyst commented on the "Operation Allied Force demonstrated that the true precision air attack—once a far-off goal but now taken for granted—has become an indispensable capability. It proved to be vital not just for the prosecution of the Balkan military effort but

[14] Thomas E. Ricks, "Bull's-Eye War: Pinpoint Bombing Shifts Role of GI Joe," *Washington Post*, December 2, 2001, p. A1. www.washingtonpost.com/a…A44042-2001Dec2.html

[15] Thomas E. Ricks, "A War That's Commanded at a Distance," *Washington Post*, December 27, 2001, p. A1. www.washingtonpost.com/wp-dyn/articles/A28078-2001Dec26.html. The numbers 24/7 refers to 24 hours/7 days situational awareness or what the Pentagon also calls "full spectrum information dominance." In the context of the Afghanistan campaign, a minor debate has surfaced with respect to the physical location of the CINC. Some have argued that like Gen. Norman Schwarzkopf during the Gulf War, the current Central Command CINC should be directing the Afghanistan campaign not from Tampa but closer to the theater, e.g., Saudi Arabia. Gen. Franks and others, however, have asserted that current communications networks fully enables his command to conduct the war in Afghanistan in real-time—something that wasn't available during the Gulf War.

also as a means of holding together the Western coalition my minimizing civilian casualties and damage."[16]

That said it should be borne in mind that in assessing the future role of air power, one major caveat is in order. Despite the ability of the U.S. and allied air forces to achieve unmatched air superiority from the onset of military operations in the Gulf War, the Kosovo campaign, and more recently in Afghanistan, it remains that the Iraqi, Serbian, and Taliban forces did not have a viable air force to counter aggressive U.S. air campaigns. During the initial stages of the air campaign in the Gulf War and in Kosovo, U.S. and coalition forces confronted Iraqi and Serbian air defenses with some collateral damage but enemy air defenses were quickly suppressed.

Throughout the Gulf War and the Kosovo campaign, air superiority was never relinquished by U.S. and coalition forces. In the Afghanistan campaign, neither the Taliban or Al Qaeda forces had viable air power with the notable exception of the possibility of portable SAMs such as Stingers left over from the earlier Afghanistan war. Since the inception of Operation Enduring Freedom, however, Stingers or similar portable SAMs were not used by the Taliban. Thus, the more relevant strategic question in analyzing the efficacy of air power today and into the foreseeable future is how air power is likely to fare under conditions where opposing forces are able to wield significant air assets including combat aircraft, bombers, smart bombs, and air defense capabilities. In essence, the key question is whether advanced air power capabilities will result in the effective dislocation or destruction of strategic and operational centers of gravity (COGs) of opposing military forces under fairly evenly matched *quantitative* conditions.[17]

For a combination of reasons that are noted below, the growing strategic importance of air power has to be understood in the context of four interlocking

[16] John A. Tripak, "The State of Precision Engagement," *Air Force*, vol. 83, no. 3 (March 2000). www.-afa.org/magainze/0300precision.html.

[17] For example, in a future conflict scenario on the Korean Peninsula, one of the most critical strategic equations is whether U.S. and South Korean air forces will be able to attain air superiority in the early phases of conflict. Despite the hollowing out of North Korea's combat aircraft capabilities over the past decade and the U.S.-ROK Combined Forces Command's ability to ultimately retain air superiority, North Korea's air defense assets, SAM batteries, underground air bases, and long-range artillery means that allied forces will suffer significant collateral damage in the earlier phases of conflict.

forces: shifting geopolitical priorities, the proliferation of asymmetrical capabilities, increasing emphasis on the need for capabilities-based defense planning and the rapidly declining likelihood of full-scale conventional conflicts or as one observer commented after the Gulf War, "of all the wars that might develop, the least likely is a global conventional war centered around a mature, prepared theater like the one that grew for 40 years over the inter-German border. The notion that no conflict is likely to center around a mature theater has some very significant implications."[18] Air power has proven to be critical in so-called cutting-out operations like Panama and Grenada including airlift, electronic detection, and extremely accurate precision attacks to support ground operations.[19] Specifically, air power offers comprehensive quick-response capabilities that no other force can easily match:

When we think about real power projection, about protecting our interests against small to midsize power threats, air power becomes dominant, and our primary defense problem becomes one of responding with sharp, decisive actions. Air power becomes important because it has a unique ability to get to the combat area with massive power and to affect enemy operational and strategic centers of gravity. *All components can attack centers of gravity, but only air power can frequently circumvent enemy forces and attack strategic centers of gravity directly*. [20] (Italics added).

While air power alone cannot possibly meet all of the emerging strategic and military challenges, it is important to note that air power in its broader configuration that includes ballistic and cruise missiles, space-based C4 ISR, and stand-off/precision targeting capabilities is emerging as the next phase of the revolution in warfare. At the center of the airpower debate is whether the current and emerging inventory of air-delivered standoff attack weapons can effectively achieve key battlefield objectives "in lieu of ground forces"[21] and the

[18] Col. John A. Warden III, "Employing Air Power in the Twenty-first Century," in Richard H. Shultz, Jr., and Robert L. Pfaltzgraff, Jr., eds., *The Future of Air Power in the Aftermath of the Gulf War*, (Maxwell Air Force Base, Alabama: Air University Press, 1992), p. 59.
[19] Ibid.
[20] Ibid.
[21] Benjamin S. Lambeth, "The Role of Air Power Going into the 21st Century," p. 117.

Gulf War stands out as one of the principal examples for air power enthusiasts who contend that were it not for the sustained air campaign, land-based war of attrition was unavoidable.

What air power achieved during the Gulf War is still open to queries, particularly in assessing the strategic objectives of Desert Storm. As Benjamin Lambeth has written, "the Persian Gulf War has now come to be seen by most observers as having been considerably less than a towering strategy success. Many of the loftier goals articulated by its leaders before the war…did not come to pass."[22] At the same time, however, he argues that in a more narrow definition of the operational application of air power, Desert Storm was "anything but inconclusive." Specifically, the operational objectives of the air campaign during the Gulf War were as follows: (1) isolate and incapacitate the Iraqi regime by attacks on leadership facilities, electric power production, and telecommunications; (2) gain and maintain air supremacy by attacks on the air defense system and the air force; (3) destroy nuclear, biological, and chemical warfare (NBC) capabilities; (4) eliminate offensive military capabilities by attacks on logistical sites, Scud missiles and launchers, oil refining and distribution facilities, and naval forces and bases; and (5) render the Iraqi army ineffective and isolate it in the Kuwait theater by attacks on railroads and bridges and on the units themselves, particularly the Republican Guard.[23]

Although it is beyond the scope of this paper to offer an in-depth assessment of the Gulf War, some statistics reveal the sheer magnitude of the air campaign. Whatever one may say about the coalition's inability to achieve key strategic objectives through air power, it should be noted that political decisions prompted the end of the hostilities after the "100 hour ground war." Overall, the coalition air campaign conducted a total of 109,876 sorties over the 43-day war or an average of 2,555 sorties per day. Of these, over 27,000 targeted Scuds, airfields, air defenses, biological and chemical weapons sites, military headquarters, intelligence assets, communications, the Iraqi army, and oil refineries.[24] In Air Force tonnage terms compared with other conflicts, however,

[22] Lambeth, op. cit., p. 119.
[23] Thomas A. Keaney, "Surveying Gulf War Air Power," *Joint Forces Quarterly*, (Autumn 1993), p. 27.
[24] "Operation Desert Storm," *FAS Military Analysis Network*, www.fas.org/man/dod-

the Gulf War was not an exercise in massive bombing as shown in Table II below. The Air Force's tonnage expenditure in the Gulf War was only 11% compared to the Japan campaign during World War II (537,000 tons) and less than 4% of the Nazi Germany campaign (1,613,000 tons). Nevertheless, the Gulf War air campaign was critical in crushing the Iraqi army barely 100 hours after the coalition's ground war began. By the end of the war, it was estimated that 32% of all Iraqi APCs, 47% of all artillery pieces, and 39% of all tanks were destroyed from the air. The destruction of the Iraqi air force was a let down for the coalition forces since remnants of the Iraqi air force fled to Iran after the beginning of coalition counterattacks. For the record, however, Iraq had 724 fixed-wing aircraft as of January 10, 1991 and by February 28, 408 were out of commission: 33 shot down, 113 destroyed in the open, 141 destroyed in bunkers and shelters, and 121 fled to Iran. By war's end, Iraq had 316 fixed-wing aircraft left in its inventory. [25]

One of the key areas where the U.S. Air Force came under criticism was in the relatively low rate in taking out Iraqi Scuds. So-called Scud hunting did not eliminate the problem but air attacks reduced, suppressed, and degraded Iraqi Scuds so that Iraqi Scud launches declined from the end of January. (Scud launches picked up somewhat in early February but tapered off towards end of February). To be sure, other mistakes were made throughout Desert Storm such as the decision to end the ground war after 100 hours without achieving a key strategic objective, namely, dislodging Saddam Hussein, intelligence and targeting problems that at certain points impeded strategic effect. That said, it is virtually impossible to imagine that Iraq's military machine could have been effectively destroyed without air power that ultimately resulted in relatively low U.S. and allied casualties. While the debate continues to this day on the efficacy of the air campaign, the air war "paralyzed, incapacitated, and demoralized the enemy from the first sorties to the last on day 38—leaving only 100 hours of 'mop-up' duty for the ground forces."[26]

101/desert_storm.-html

[25] "Statistics from Desert Storm," www.afa.org/magazine/0498storm.html

[26] Lt. Col. Martin Wojtysiak, "Another View of the Myths of the Gulf War," *Airpower Journal*, vol. xv, no. 3, (Fall 2001).
www.airpower.maxwell.af.mil/airchronicles/apj/apj01/fal01/wojt…

Table I
Bomb Tonnage Comparisons

War	Tonnage	Length	Tonnage/Month
World War II	2,150,000	45 months	47,777.78
Korea	454,000	37 months	12,270.27
Vietnam/SEA	6,162,000	140 months	44,014.29
Gulf War	60,624	1.5 months	40,416.00

Source: "Operation Desert Storm," *FAS Military Analysis Network*, www.fas.org/man/dod-101/desert_storm.-html

A related component of the air power debate is whether air power can really be effectively utilized across the spectrum of conflict, particularly in low intensity conflicts such as Bosnia or more poignantly, Chechnya. In brief, it should be noted that the initial failure of Russia's operations against rebel forces in Chechnya owed as much to a combination of poorly trained and equipped troops, low morale, poor intelligence, and deflating Chechnya's warfighting potential. One major flaw of the initial air campaign was the focus on destroying Chechnya's limited air force rather than destroying high value targets such as Chechnya's administrative and military command and control centers, communications hubs, and other key infrastructures although close air support for Russian ground forces proved to be critical force multiplier in the overall campaign. Generally speaking, however, the Chechnya campaign demonstrated that "air power cannot invariably work its reputed magic in circumstances where the target set is elusive, problems predominate in target location and identification, and there is an ever-present danger of unintended harm to noncombatants."[27] Some of the key lessons from the Russian air campaign can be cited as follows: (1) air superiority provides no guarantee of victory even against an enemy with no effective air force; (2) militias and guerillas can effectively use high-information assets as easily as modern armies allowing them

[27] Benjamin S. Lambeth, "Russia's Air War in Chechnya," RAND Draft Report as cited by Timothy L. Thomas, "Air Operations in Low Intensity Conflict," *Airpower Journal*, vol. 11, no. 4 (Winter 1997), p. 55.

to establish quick contacts, mobilize assets, and access other information; (3) operating in LIC environments will mean finding and defending against mobile targets spread throughout the country and the civilian population; and (4) realistic training is essential to overcome LIC threats.[28]

If Chechnya was a real eye opening experience on the rapid decline of Russia's armed forces after the collapse of the Soviet Union and a textbook case of how *not to* wage war, NATO's Kosovo air campaign, while successful, was entangled from the very beginning by a combination of political constraints, deeply imbedded policy disputes within NATO, and significant military obstacles. Although NATO's 78 day air campaign over Kosovo in 1999 ended with Yugoslavian President Slobodan Milosevic's capitulation, a fierce debate continues to rage even today on the overall effectiveness of the air campaign.[29] When NATO forces began operations on March 24, 1999, it was tasked with five key objectives: (1) ensure a verifiable end to all military action and the immediate ending of violence and repression by Serbian forces in Kosovo; (2) withdrawal from Kosovo of Serbian military, police, and para-military forces; (3) agreement to the stationing in Kosovo of an international military presence; (4) agreement to the unconditional and safe return of all refugees and displaced persons; and (5) provide credible assurance of Serbian willingness to work on the basis of the Rambouillet Accords in the establishment of a political framework agreement for Kosovo in conformity with international law and relevant U.N. provisions.[30] Poor weather conditions, a 15,000 feet ceiling for air sorties in order to avoid Yugoslavian air defense systems, and the decision to forego a ground invasion affected the overall effectiveness of the campaign such as the ability to rapidly stop Serbian aggression against the Kosovars. In the final anlaysis, Operation Allied Force was successful owing to NATO solidarity and the persistence and precision of the air campaign that damaged Milosevic's forces to wage an effective military campaign against NATO.

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[28] Timothy L. Thomas, "Air Operations in Low Intensity Conflict," *Airpower Journal*, vol. 11, no. 4 (Winter 1997), p. 58.

[29] For a succinct overview of the conditions under which Milosevic settled after the 78 day air campaign, see "Why Milosevic Decided to Settle the Conflict Over Kosovo When He Did," *RAND Research Brief*, www.rand.org/publications/RB/RB71/

[30] "Operation Allied Force," *FAS Military Analysis Network*, www.fas.org/man.dod101/ops/allied_force.-htm

In hindsight, the problems associated with Operation Allied Force was as much political as military given the unusually tight constraints in which NATO had to conduct the air campaign. As is well known, the United States and NATO ultimately had to resort to the use of force after repeated warnings to Milosevic to desist from military operations in Kosovo. Convinced that these threats were bluff, Milosevic intensified his repressive actions in Kosovo that left NATO with only one credible option—to restore political credibility by undertaking military operations. When the option for a ground war was rejected, NATO had to undertake an air campaign that ultimately resulted in victory but post-war analysis also showed that despite 38,000 sorties NATO failed to substantially degrade the Yugoslav army in Kosovo and to shape the situation on the ground.[31]

Perhaps the most important lesson from the Kosovo air campaign was NATO's decision to use "maximum achievable force" in phased operations given that it could not resort to large-scale ground operations, massive bombing, or other brute-force in order to minimize civilian casualties.[32] Thus, this basic constraint resulted in the implementation of strict protocols relating to target selection and identification and to the weapons chosen to attack each target. Seen from such a perspective, precision guided munitions (PGMs) in Operation Allied Force were highly effective, or in the words of then Chairman of the Joint Chiefs of Staff Gen. Henry H. Shelton, Operation Allied Force represented "the most precise bombing campaign in history."[33] (During Desert Storm 9% of the total munitions used were PGMs compared to 35% in Allied Force).

Such an optimistic assessment of NATO's air campaign is probably understandable given that the U.S. military and NATO had to conduct military operations under extremely limiting circumstances. Even so, detractors continue to point out that "the air campaign, conducted in isolation, is not a fair test of air power, nor should its apparent success lead to asymmetric bases for future

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[31] Alain Pellerin, "Fallout from the Air and Missile Offensive Against Yugoslavia," *FAS Military Analysis Network*, www-.fas.org/dod-10/ops/docs99/ndu99/pellerin.html

[32] Tripak, "The State of Precision Engagement."

[33] Ibid. The U.S. lead in the Kosovo air campaign was possible to a number of efforts that took effect after the Gulf War notably the equipping of all fighters with the ability to use Laser-Guided Bombs (LGBs), greater dissemination of night vision gear, and introduction of a new class of low-cost satellite-guided weapons.

strategy and force structure. In fact, air power alone failed to meet its prewar promise."[34] Or as one succinct analyst has noted:

> Airpower is a precious asset. Merely because it *can* be used does not necessarily mean that it *should* be used. When it is used, it should be used appropriately to maximize its inherent capabilities. A near flawless operational application of airpower cannot substitute for a flawed strategy…In a curious sort of way, the myths of air war over Serbia are part of the problem, not part of the solution in sustaining our investment in airpower…As the joint force air component commander himself—Lt. Gen. Mike Short, USAF, Retired—has commented about the air war over Serbia, 'This was little more than random bombing of military targets that achieved victory by happenstance.'"[35]

Indeed, the argument on whether or not air power is able to conduct LIC-related missions predates NATO's Kosovo campaigns, not to mention Russia's initial setbacks in Chechnya. For example, when Britain faced an increasing number of new colonial obligations in the form of League of Nations mandates to govern Palestine, Transjordan, and Iraq, the Royal Air Force argued persuasively based on its initial success in quelling uprisings in Somaliland in 1919-20 that it should be given full responsibility to undertake military operations in Britain's most troubling new mandate in the former Ottoman provinces of Mesopotamia. By the late 1920s, the RAF registered a number of successes but these were due not only to the relatively new use of air power to police colonies, but owing to relatively smooth joint operations between the RAF, British Army and Iraqi Army units. Until such time that the RAF secured its position as an independent service, the RAF hierarchy took special care not to offend its army partners or to overplay the role of air supremacy. As one RAF officer wrote in 1992, "it is not for one moment to suggest that aircraft alone can garrison any country without military assistance, but rather to show that

[34] Alain Pellerin, "Fallout from the Air and Missile Offensive Against Yugoslavia."
[35] Grant T. Hammond, "Myths of the Air War over Serbia," *Airpower Journal*, vol. 14, no. 4 (December 2000).

economy in military strength and in money may be effected by a more extensive employment of aircraft."[36]

While the RAF was involved constantly in a series of combat operations such as bombing campaigns or ground-support operations, "the air-control experience did not translate into tactics useful in conducting a major conventional war"[37] so that when World War II broke out, the RAF basically had to learn from scratch how to carry out conventional air campaigns. As one commentator notes, however, the key lesson from the British experience during the interwar years is that while air control may appear to be cheap, effective, and with the added benefit of low casualties, it does not follow that air power is a doctrinal solution to some of the current peacekeeping operations that burdens the U.S. defense establishment. While air control may look like the ideal answer, it is, in the words of one analyst, actually quite deceptive in that "one could barely justify air control as a doctrine 80 years ago, and people who advocate an updated version of such doctrine for current U.S. Air Force operations have misread history."[38]

The contours of the emerging air power debate, or more precisely, the role of air power in the conduct of future warfare or conflicts, is therefore likely to be shaped by the following key drivers. First, the emergence of "hybrid conflicts" or amalgamated or layered conflicts that are characterized by the compression of conventional, unconventional, asymmetrical, information warfare, terrorism, and guerilla warfare. Variations of hybrid conflict can be found throughout the history of warfare but they have gained increasing currency owing to the acceleration of asymmetrical capabilities such as weapons of mass destruction (WMD), ballistic and cruise missiles, information warfare, and of late, unmanned combat air vehicles (UCAVs). The ability to successfully defeat opposing forces is likely to become increasingly dependent upon the ability to

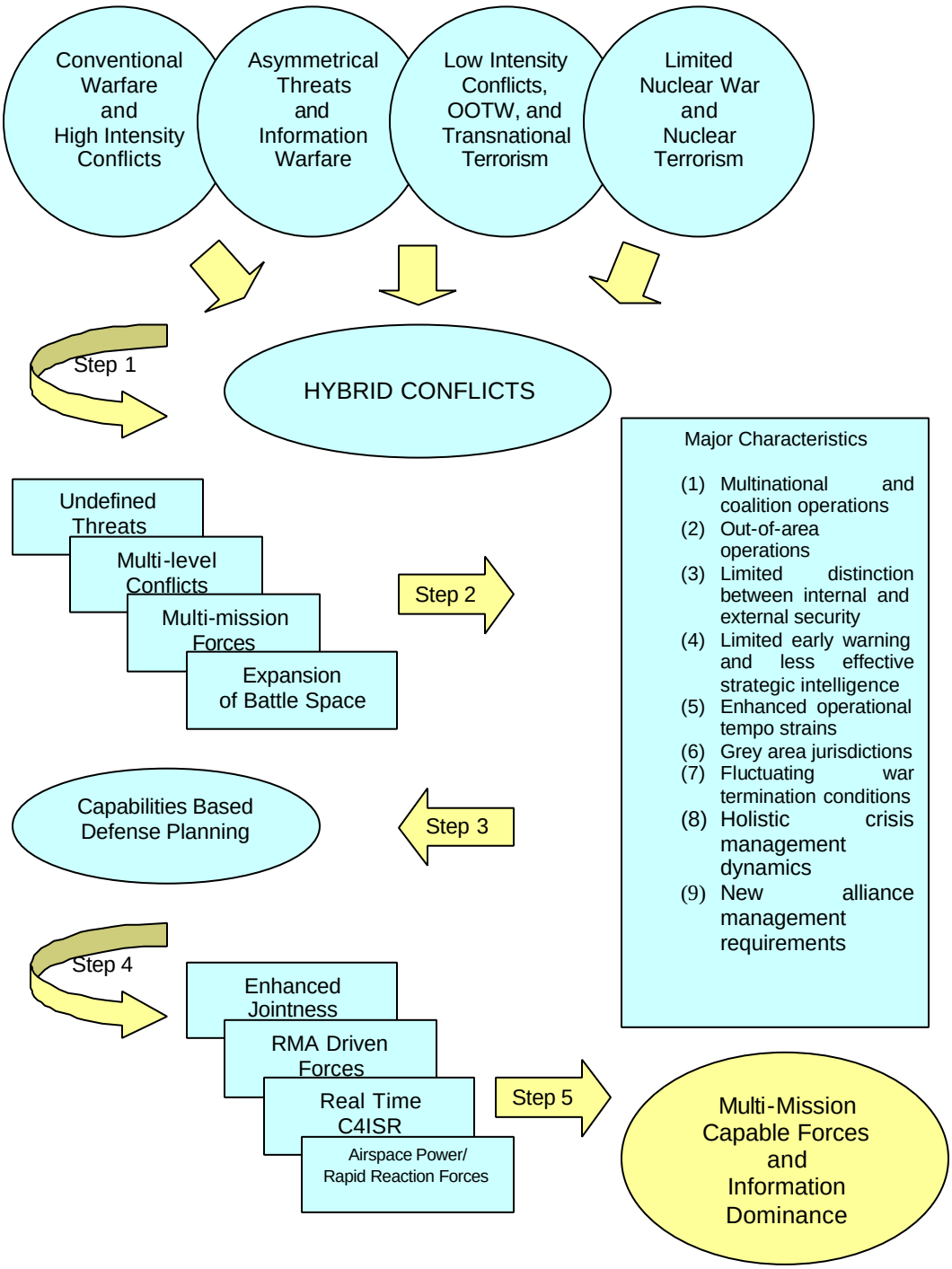
[36] Flight Lt. C.J. Mackay, "The Influence in the Future of Aircraft Upon Problems of Imperial Defence," *RUSI Journal 67* (May 1922), p. 299 as cited in James S. Corum, "The Myth of Air Control: Reassessing the History," *Aerospace Power*, vol.. 14, no. 4 (Winter 2000). www.airpower.maxwell.afmil/-airchronicles/apj/apj001/win001/corum.doc.
[37] James S. Corum, "The Myth of Air Control: Reassessing the History," *Aerospace Power*, vol.. 14, no. 4 (Winter 2000).
www.airpower.maxwell.afmil/airchronicles/apj/apj001/win001/corum.doc.
[38] Ibid.

rapidly deploy an array of forces and weapons systems with superior and real-time strategic and tactical intelligence. More than ever, military forces both on the ground and in command centers have to demonstrate the ability to perform increasingly complex multifaceted missions under severe operational tempo requirements. With the notable exception of U.S. and perhaps a very small circle of near-capable forces such as the British and French, and in increments the Chinese and Japanese forces, the ability to effectively fight and win future hybrid conflicts will be limited. Thus, notwithstanding the success of post-Gulf War air campaigns in maintaining and retaining air superiority as well as interdicting and destroying ground forces (notably Iraqi and Serbian but also Chechnyan in the second Chechnyan campaign), success in Operation Enduring Freedom is *unlikely* to be easily transferable or duplicated *unless* one is able to field battle management and combat assets that will enable militaries to fight "smart" wars across the conflict spectrum.

Second, the changing dimensions of nuclear and conventional deterrence in the face of accelerating asymmetrical technologies and the very real probability of cataclysmic terrorism. As the September 11 terrorist attacks demonstrated, it is virtually impossible to prevent cataclysmic terrorism. To be sure, the war against terrorism has resulted in some gains that could serve to deter certain acts of terrorism. For example, between 800 and 1,000 terrorism suspects have been arrested or detained in more than 50 countries excluding the near 700 held in the United States. More than 140 countries have frozen assets in 270 accounts with assets of $65 million.[39] But more to the point, enhancing *strategic* deterrence vis-à-vis transnational terrorism or the proliferation of WMD and asymmetrical weapons systems (such as ballistic and cruise missiles as well as UCAVs) are likely to be remain highly situation specific. Thus, fielding more RMA-intensive forces and weapons systems should not be construed necessarily as enhancing one's deterrent capabilities against a spectrum of focused asymmetrical challenges.

[39] Robin Wright, "Invisible War on Terror Accelerates Worldwide," *Los Angeles Times*, January 7, 2002. www.latimes.com/templates…/printstory.jsp?slug=la%-2D010702nex

Graph 1 Hybrid Conflict and Defense Planning



Third, long-term force restructuring efforts are likely to be driven by the need to field a truly joint force or a force that is "organized, trained, and equipped as a joint force that has a standing joint command and control capability, exercises frequently, and participates in tests of new ways of working together."[40] In situations that are likely to be characterized by hybrid conflicts, the effectiveness of joint operations will become a key prerequisite for operational success. That said, deeply imbedded bureaucratic and service specific resistance to jointness could stifle any significant move to create a truly joint force, especially under situations when jointness inevitably leads to addressing force imbalances as is the case in the ROK's Armed Forces or the People's Liberation Army (PLA). The allocation of force modernization budgets already under severe constraints in most of the mature armed forces will mean even more intensified funding battles between the services. Therefore, a major gap is likely to persist in those states and their armed forces in understanding the inherent advantages provided by the on-going Revolution in Strategic Affairs (RSA) (or the "system of systems" revolution that includes the RMA and information dominance) and realistic attempts to implement concrete policy, doctrinal, strategic, and procurement decisions in an era of shrinking defense budgets and service specific bureaucratic inertia.

Fourth, integrated C 4 ISR with holistic intelligence capabilities is already emerging as a decisive force multiplier in the modern battlefield but with even greater implications for the emerging electronic battlefield of the 21st century. No armed force today and well into the future will be able to perform an increasingly complex array of missions without comprehensive intelligence capabilities. For the time being, the ability to attain near-total or total situational awareness is likely to be exercised primarily by the U.S. military given its dominance of space-based intelligence platforms. As former U.S. Air Force Chief of Staff Ronald Fogleman remarked in the mid-1990s but still highly relevant today:

[40] Statement by Retired U.S. Air Force Brig. Gen. James McCarthy as reported in Jim Garamone, "Joint Operations is Key to Transformation," *American Forces Press Service*, June 14, 2001. www.defenselink.mil/specials/transform/-joint_ops.html.

From space we provide global situational awareness. Our space forces are central to giving this capability to the nation. These assets provide a unique kind of global presence from the high ground. *We help monitor events and provide timely information—-24 hours a day, anywhere in the world*…Now you ask, 'Can space forces influence events?' You bet. Not only do they do it in a very real sense as we look at intelligence, reconnaissance, and surveillance data, but they are constantly present…Because of what we can do in the space medium, I would suggest that space is the four dimension of warfare. And, we've entered this dimension by building on our experiences in air.[41] (Italics added).

In essence, these four drivers as well as others are likely to have a significant impact on conceptualizing, planning, and executing future military operations. Although these drivers are going to impact force modernization and restructuring efforts globally, they will significantly affect the East Asian strategic landscape well into the 2020 plus time frame for a combination of reasons. To begin with, the shift in global geopolitics from Europe to Asia means that the primary sources of competition between the major powers and newly emerging powers will be focused in East Asia, particularly in Northeast Asia. As one former U.S. Air Force chief of staff has written, the 21st century will be remembered as the "aerospace century" and in combination with the geostrategic rise of Asia, "offer unparalleled opportunities for Asia—and for Northeast Asia in particular." Although historical comparisons should always be treated with caution, the key cause for concern for 21st century Northeast Asia lies in the growing possibility of strategic rivalry. Unlike the early 20th century when Japan was the only Asian nation-state that harbored modern military capabilities, East Asia today has the highest concentration of conventional as well as unconventional forces in the world. Even as East Asian states cooperate on economic matters, they may view each other as strategic rivals and while "wars between them may not be likely, but neither will it be unthinkable."[42] (For

[41] Gen. Ronald R. Fogleman, "Air and Space Power in the 21st Century," remarks delivered for the 1995 Ira C. Eaker Lecture, United States Air Force Academy, Colorado Springs, Colorado, April 6, 1995. www.af.mil/news/speech/current/html

[42] Richard J. Ellings and Aaron L. Friedberg, *Strategic Asia 2001-02: Power and Purpose*, (Seattle, Washington: The National Bureau of Asian Research, 2001), p. 11.

illustrative purposes, see Table I below which shows the region's share of world GDP compared with Europe and North America. Asia's share of global GDP in 1950 was 19%, behind Europe's 30% and North America's 31%. In four decades, Asia's share of world GDP rose to 37% topping Europe's 23% and North America's 25% in 1998 with projections of 43% of world GDP by 2015).

Table II
Shares of World GDP by Regions

	1820	1870	1913	1950	1973	1998	2015
Asia	59%	38%	25%	19%	24%	37%	43%
Europe	27%	38%	38%	30%	29%	23%	<19%
North America	2%	10%	22%	31%	25%	25%	>17%
Russia	5%	8%	9%	10%	9%	3%	3%

Source: Richard J. Ellings and Aaron L. Friedberg, *Strategic Asia 2001-02: Power and Purpose*, (Seattle, Washington: The National Bureau of Asian Research, 2001, p. 2)

More relevant, however, is the very high concentration of conventional forces that are adopting in their own ways new power projection capabilities with an emphasis on acquiring asymmetrical capabilities. While the circumstances are quite different from state to state, the PLA's focus on acquiring superior information warfare fighting capabilities together with a long overdue replacement of its aging combat aircraft, the SDF's comprehensive force modernization programs including a strategic shift vis-à-vis China, South Korea's own mid- to long-term defense modernization programs including next generation combat aircraft (FX), early warning aircraft (EX), and Aegis-class cruisers (KDX III), and North Korea's continuing efforts to upgrade its ballistic missile forces coupled with on-going concerns on a potential nuclear weapons program suggests that almost all of the major armed forces in East Asia are in the process of implementing their own versions of "defense transformations." As a RAND study noted recently, "if or when they enter the geopolitical arena as

confident 'actors,' they may find themselves engaged in heightened political-military competition or even conflict with their neighbors."[43]

The acquisition of more lethal, accurate, and mobile weapons systems connected by an increasingly modernized C4 ISR system (partially driven by Northeast Asia's on-going Information and Communication Technologies revolution) means that for the first time in history, almost all of the mature armed forces in the region now have growing power projection capabilities. Such developments have also been spurred by latent strategic rivalries based on the the specter of a rising China and India, a more security conscious and militarily capable Japan, the possibility of volatile if not violent transitions on the Korean Peninsula, and potential military clashes in the Taiwan Straits or in the South China Seas. Or as one noted U.S. observer has written:

The information revolution spreading around the world brings much more diverse sources of intelligence to the Asian military decision-making system. Satellites, fiber-optic communication lines, computer networks, and cellular telephone technologies disgorge information that will transform civil-military relations in Asia. The new information technologies allow a quantum jump in performance for key parts of the military…*In some areas, like jet aircraft or mechanized ground warfare, the Asian military is extremely backward compared to America or Europe. However, this assessment overlooks the role of new information technologies in making missile strikes and other tactics highly effective.*[44] (Italics added).

As East Asia enters the 21st century, modernized power projection capabilities has finally enabled most regional powers with the ability to incrementally overcome the "tyranny of geography." To what extent emerging strategic rivalries may escalate into actual conflicts remains unknown since one cannot assume that more robust power projection capabilities will necessarily lead to strategic instability and conflict. Given the very real prospects for enhanced friction in East Asia over the next 10-15 years owing to accelerated Chinese military capabilities, more robust Japanese and South Korean air and

[43] Zalmay Khalilzad, et. al., *The United States and Asia: Toward a New U.S. Strategy and Force Posture*, (Santa Monica, CA: RAND, MR-1315-AF, 2001). P. 7.
[44] Paul Bracken, *Fire in the East: The Rise of Asian Military Power and the Second Nuclear Age*, (New York: HarperCollins Publishers, Inc., 1999), p. 79.

naval assets, and North Korea's on-going search to strengthen its correlation of forces, preventive politico-military measures including sub-regional confidence building measures could be implemented. "But it is also easy enough to imagine events—a mismanaged crisis on the Korean Peninsula or a confrontation across the Taiwan Strait or over Kashmir—that could shake strategic Asia to its core and bring powerful competitive forces, now latent, to the surface."[45]

3. The First Revolution in Strategic Affairs (1850-1900) and Western Primacy

Pundits and scholars alike hotly debated the cumulative effects of "globalization" just as the industrial revolution was reaching a tipping point in the 1890s. Coming on the heels of unparalleled economic growth, a technological explosion, and *relative* political stability, the globalization discourse of the 1890s and the early 1900s grappled with four main issues. First, whether science and technology, and in particular, the emergence of a truly global communications network, could spur conceptual as well as policy changes including greater emphasis on diplomacy and eventually, the realization of the futility of war. Second, if global commerce (to the extent that new markets were being excavated with more speed than ever before) and corresponding wealth (albeit primarily within the Great Powers) could result in marked improvements in the human condition. Third, the prospects for participatory politics and "good governance" based on a growing awareness of human rights, social justice, political empowerment, and the virtues of civic society. And fourth, on the possibility of forging more genuine and lasting international peace driven by the spreading of liberal democracy, international institutions, universal norms and values, and global disarmament.

One of the key themes which permeated the first globalization debate was how progress in science and technology could be used not only in the sense of social engineering, but in addressing the outstanding international issues of the day, including the primordial question of war and peace. In short, as the diffusion and proliferation of technology began to have truly national and global

[45] Ellings and Friedberg, *Strategic Asia 2001-02*, p. 23.

consequences, technology was being perceived not merely as a means to enhance productivity, but as a holistic change agent. Breakthroughs in key technologies meant that technology was being perceived for the first time as an indispensable "force multiplier", not only in the narrow military sense but as a catalyst for potentially unlimited social, national, regional, and international progress. At the very same time, the darker side of technology was also being recognized, particularly in the arena of military capabilities. The Prussian Army was one of the first European armies to understand the symbiotic relationship between centralized command and control, transnational power projection capabilities, and modernized logistics. Technologies such as the steamship, railway, telegraph and cable, advanced munitions, chemical weapons, and the machine gun provided the professional armed forces with their first comprehensive revolution in military affairs (RMA) since the advent of the gun powder.[46] Thus, as the world's first RMA accelerated from the Crimean War of 1854 until the First World War, governments began to grapple with the duality of technology: as an agent of progress as well as mass destruction although the latter half did not fully register until the advent of the First World War.

The world's first revolution in strategic affairs would not have occurred without a shift from the "old economy" to the "new economy" of the latter half of the 19th century. In a span of fifty years beginning from the unsuccessful revolutions of 1848 until the outbreak of the Spanish-American War in 1898, more global wealth was created in this period than the previous 1,000 years. Measured in 1960 U.S. dollars (billions), Britain's GNP rose from $8.3 billion in 1840 to $29.4 billion in 1890 while Germany's GNP increased from $10.3 billion to $26.4 billion in 1890.[47] The rise of the United States as the emerging global power spurred the global economic expansion of the late 19th and early 20th centuries and by the dawn of the outbreak of World War I in 1914, the United States became the undisputed global economic power. With a national

[46] Michael Howard, *Wars in European History* (Oxford: Oxford University Press), p. 34. Howard did not use the term "revolution in military affairs" in analyzing the advent of new technologies and strategies in the European armies of the mid- to late 19th century but for all practical purposes, Howard produces an elegant treatment of the RMA which was in full-swing by the 1880s and 1890s.

[47] Cited in Paul Kennedy, *The Rise and Fall of Great Powers* (New York: Random House Publishers, 1987), p. 171.

income of $37 billion, a population of 98 million and a per capita income of $377, the United States outclassed every single European power.[48] Britain was eclipsed by Germany as the world's second largest economic power on the eve of the Great War and Japan had emerged as the most powerful Asian power.

This global economic expansion was by no means universal since it was limited principally to the "G-8" of the late 19th century.[49] Nevertheless, the "first globalization" which can be said to have lasted from the 1850s to the early 1900s resulted in a debate uncannily familiar to the on-going discourse on the virtues or lack thereof of globalization. While the context of the globalization debate in the late 19th century was assuredly different from the debate which would occur a hundred years hence, governments, corporations, the military, the scientific community, and the media were all trying to understand the cumulative effects of globalization. In particular, the advent of the telegraph—-the internet of the 19th century—-and global commerce led many to believe that the central problem of endemic wars could be finally resolved through growing awareness of the futility and lethality of wars. As one British telegraph expert wrote in 1898:

An entirely new and much-improved method of conducting diplomatic relations between one country and another has come into use with the telegraph wire and cable. The facility and rapidity with which one government is now enabled to know the 'mind'—-or, at any rate, the professed mind—-of another, has been the means of averting diplomatic ruptures and consequent wars of the last few decades…*On the whole, experience distinctly pronounces in favor of the pacific effects of telegraphy*. (Italics added).[50]

Such hyperbole extended even into such respected journals as the *Scientific American* which noted that the global communication revolution was going to result in greater understanding among nations and governments and the spreading of universal values. Most important, it noted that the "welding of

[48] Ibid., p. 242.
[49] The "G-8" of the late 19th and early 20th centuries included the United States, Germany, Britain, France, Russia, Italy, Austria-Hungary, and Japan. With the exception of Austria and Hungary, the only new addition to the current G-8 is Canada.
[50] Tom Standage, *The Victorian Internet* (New York: Walker and Company, 1998), pp. 161-162.

human sympathy" was a "spectacle unparalleled in history…and indicative of a day when science shall have so blended, interwoven and unified human thoughts and interests."[51] While ordaining the future was as imprecise a century ago as it is today, it bears mentioning that just two decades after these and similar pronouncements were made, almost all of the world's major powers would be engulfed in history's most destructive war until the outbreak of an even more catastrophic conflict two decades after the end of the "war to end all wars." Contrary to popular expectations, the global economic expansion which preceded World War I did not result in a peace dividend but were channeled increasingly into building more mobile and lethal armed forces.

The tremendous acceleration in global manufacturing output based on more efficient energy supplies and quantum leaps in manufacturing technologies enabled the United States, Great Britain, and France to hold a 51.7% share in world manufacturing production compared to 19.2% for Germany and the Austro-Hungarian Empire.[52] Based on these developments, the military and naval personnel of the Great Powers registered a sharp increase from 1880 until 1914. Russia's total force grew from 791,000 to 1,352,000 in the period whereas Germany's military increased from 426,000 to 910,000. Japan and the United States registered the sharpest growth.

In 1880, the United States had a total force of 34,000 troops and Japan had 71,000 in the Imperial Army and Navy. In 1914, the U.S. military grew to 164,000 while Japan's grew to 306,000.[53] Warship tonnage in the period from 1880 to 1914 (the most coveted power projection means of the time) shows a similar trend although Britain remained as the undisputed naval power in 1914 with 2,714,000 tons compared to 1,305,000 tons for Germany, 985,000 tons for the United States, 900,000 tons for France, and 700,000 tons for Japan.[54] (Most significantly perhaps, Japan's warship tonnage was a mere 15,000 tons in 1880 which was the smallest of the major powers. By 1914, however, she would displace Russia, Italy, and Austria-Hungary in terms of total tonnage).

[51] Ibid., p. 162.
[52] Kennedy, *The Rise and Fall of the Great Powers*, p. 271.
[53] Ibid., p. 203.
[54] Ibid.

The modernization of these military establishments began to have global consequences even prior to the outbreak of World War I. The Spanish-American War of 1898 symbolized the preponderance of American power in the Western Hemisphere and the beginning of the United States' strategic presence in the Asia-Pacific region based on its possession of the Philippines. Within Asia, the industrialization and military modernization of Japan in the decades following the Meiji Restoration of 1868 enabled it to displace China as the regional hegemon and Russia as a potential hegemon through the Sino-Japanese War of 1894-1895 and the Russo-Japanese War of 1905-1906. From a historical spectrum, the emergence of Japan as a de facto "Western" military power in less than five decades broke the Western powers' monopoly on power projection from at least the early 17th century. Without the harnessing of modern technologies-—particularly in the military arena—-Japan would not have been able to contest Chinese, Russian, and eventually, American supremacy in the Asia-Pacific region.

War broke out in 1914 owing to the confluence of forces such as the breakdown in Europe's classical balance of power and attendant alliances, entrenched jingoism or hyper-nationalism, and the absence of more viable peacekeeping institutions and regimes. The sheer carnage which was unleashed during the war resulted in two key developments: the push for disarmament and growing pacifism in selected Western states and the growing realization of the need for government-sponsored scientific research and development. While the application of technology to enhance political and military objectives was not new, the sheer magnitude of opportunities rendered by technological advances following World War I was without parallel. The harnessing of new technologies for a new political order backed up by the most advanced military force was most adroitly exploited by Nazi Germany after Adolf Hitler became Führer of the Third Reich and commander-in-chief of the Wehrmacht in August 1934.[55] The power of mass agitation and propaganda (or agitprop) based on modern communications was first demonstrated following the Bolshevik Revolution but

[55] For a lucid treatment of the rise of the Wehrmacht, see Albert Seaton, *German Army 1933-1945* (New York: St. Martin's Press, Inc., 1982). In a forboding development, all members of the Wehrmacht which had hitherto pledged allegiance to the Weimar constitution were ordered to pledge their personal and absolute loyalty to Hitler.

ultimately masterminded by Nazi Germany and subsequently in Facist Italy and Imperial Japan.

By way of summary, perhaps one of the most important consequences of the first globalization was the undeniable marriage between politics and technology. More precisely, as scientific knowledge and R&D witnessed phenomenal leaps during the interwar years, technological advancement became synonymous with progress and power, but especially as a manifestation of the latter. In the military domain, the advent of avionics in World War I expanded the theater of operations to the air. By the closing days of World War II, the Wehrmacht's V-2 demonstrated the devastating impact of a ballistic missile attack. Had Germany developed and deployed the V-2 just a year or two earlier, the outcome of the European campaign—-and by inference, the final settlement of World War II--could have been very different. But the development of the atomic bomb and the destruction of Hiroshima and Nagasaki in 1945, symbolized most poignantly the unparalleled dichotomy of modern technology, as a purveyor of progress and destruction. As the world ventured uncertainly into the nuclear age, grappling with this central dichotomy would become, in many respects, the sine qua non of postwar international relations.

4. The Second Revolution in Strategic Affairs (1950-2000) and East Asia's Future

The tipping point of the first revolution in strategic affairs coincided with the outbreak of World War I and in many respects, the symbiosis between technology and power also took a new turn. Hard power still mattered (as it still does today) but in more ways than one, the advent of modern technologies during and after the First World War revealed the coming of age of soft power. To be sure, the full spectrum of the initial telecommunications revolution would not be felt until the late 1950s with the invention of the transistor (if not still later with the coming of the internet), but the conceptual melding of hard and power has its origins in the first globalization era.

Contrary to conventional wisdom, it was not the Gulf War, but the Second World War which was the testing ground for the world's first comprehensive technology-intensive war. Granted that while smart weapons and

real-time communications were not available during World War II, this conflict more than any other created the backbones of the postwar armed forces. More important, World War II was the first conflict which enabled nations to project their power globally, thus overcoming the tyranny of distance. Nevertheless, resolving the problem of distance only answered one part of the strategic equation since modern technologies did not yet (and still cannot) solve the question of maintaining a strategic presence solely or primarily on the basis of technologies.[56]

The Western mastery of technology which continued for some two hundred years enabled Western Europe and the United States to emerge as key global powers. This preponderance of military power combined with modern economic and technological infrastructures was the essential ingredient which prevented other powers from contesting Western supremacy. As Paul Bracken points out in *Fire in the East*, the West was able to shape the international community largely on account of its military supremacy but he notes that this hegemony is coming to an end:

> The industrialization and economic growth in Asia in the 1990s started in the 1960s, when Japan proved that it could be done, that industrialization was not a Western monopoly. This had nothing to do with the start or the end of the cold war. Rather, it proved that what Japan could do, so could China and India. If it could be done in industry, it could also be done in the military. The world now is going through this more basic transition, full bore into what is not a post-cold war era but a post-Vasco de Gama one. *It is a world where Asian economies and Asian military power are much more important factors in world politics, and where the automatic presumption of Western control over each no longer holds.*[57] (Italics added).

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[56] Emerging technologies such as space-based weapons systems, other aerospace platforms, as well as unmanned combat aircraft and submarines could one day diminish the need for forward presence. Nevertheless, crises and conflicts which necessitate rapidly deployed forces, operations other than war (OOTW), and variations of low intensity conflicts (LICs) and humanitarian intervention operations will still require a minimum level of armed personnel.

[57] Bracken, *Fire in the East*, p. xvii.

Technological prowess no doubt was a central factor in pushing the United States to superpower status during the Cold War but the Vietnamese conflict demonstrated that technology alone could not guarantee success on the battlefield. More important, the de facto Western monopoly on key dual-use and military technologies would slowly begin to ebb during the latter phases of the second revolution in strategic affairs, coincident with the ending of the Cold War. The fusion of technology and politics during the first revolution in strategic affairs was an important paradigm shift since it became impossible to divorce the two, but for the most part, the exploitation of technologies was still confined to that elite group of nation-states which formed the nucleus of the world's first globalization revolution. The second revolution in strategic affairs, however, would lay the foundation for an even more important shift: namely, nation-states other than the G-8 were beginning to acquire an array of modern technologies including asymmetric weapons systems and more ominously, weapons of mass destruction.

The infusion of modern technology into non-Western nations really began in the post-World War II era although there were exceptions such as Meiji Japan. As the global economy grew following the reconstruction of Europe and Japan, other regions also began to develop including East Asia, Latin America and selective states in the Middle East although the latter's growth was based primarily on oil reserves. By the 1970s when East Asia's Four Tigers began to emulate Japan with their double-digit GDP growth, they also began to acquire more modern weapons systems. Clearly, there were constraints and limitations ranging from alliance politics to limited financial resources to legal roadblocks. But the accelerated development and marketing of dual-use technologies, growing defense industrial capabilities, post-colonial expressions of nationalism, and defense self-sufficiency among other factors contributed to the gradual upgrading of the region's military forces.

Nevertheless, advanced military systems were not just for the wealthy or the newly wealthy. Every decade since the 1950s has resulted in the emergence of a new nuclear weapon state or a virtual nuclear weapon state and with the exception of Israel, all of them have been Asian states. China tested its first nuclear device in 1964 between the disastrous Great Leap Forward and the Cultural Revolution. When India tested its first "peaceful nuclear device" in

1974, it elevated the Indo-Pakistani rivalry to the nuclear level since Pakistan was determined to develop its own nuclear arsenal as it eventually did. In the 1980s, North Korea began to work on a clandestine nuclear weapons program which to this day remains as one of the core nuclear proliferation threats. In June 1998, India conducted its first open nuclear weapons test followed closely by Pakistan's own nuclear test. During the four decades following the Korean War, other countries tried to acquire nuclear weapons such as Iraq, Brazil, and South Africa although Pretoria "voluntarily" dismantled its limited nuclear arsenal prior to the coming to power of a black majority government. South Korea and Taiwan, it has been suggested, also tried to develop their own nuclear weapons based on growing concern beginning in the early 1970s as the United States began to disengage from the war in Vietnam.

The military implications of East Asia's rise are varied although three principal questions demand close attention. First, what are the chances of a major power transition? Specifically, if China does become the region's most dominant economic as well as military power over the next two to three decades, how will the United States react? How will a powerful, if not dominating China affect the security policies and military strategies of the United States, Japan, and Korea? Second, based on the on-going revolution in military affairs (RMA) and the overall ability of the regional actors to acquire increasingly sophisticated weapons systems, what type of forces will the regional actors likely to possess in the mid- to longer-term? In particular, what type of power projection capabilities or other "destabilizing" systems will the regional actors possess?[58] Third, the potential sources of conflict in a region which could be increasingly characterized by multipolar dynamics. Or as one observer noted in the early 1990s just as East Asia was focusing its efforts on active force modernizations,

[58] Although force modernization imperatives are driven by a number of factors such as threat assessments, access to modern weapons systems and technologies, financial resources and political considerations, many of the regional actors have focused their recent acquisition programs in the following areas: (1) command, control and communications systems; (2) national strategic and tactical intelligence systems; (3) multipurpose combat aircraft; (4) maritime surveillance aircraft; (5) modern surface combatants; (6) anti-ship missiles (both ground- and sea- launched); (7) submarines; (8) electronic warfare systems; and (9) rapid deployment forces. For additional details, see Desmond Ball, "Arms and Affluence: Military Acquisitions in the Asia-Pacific Region," *International Security*, vol. 18, no. 3 (Winter 1993/94), p. 81.

"what is unfolding in East Asia is a race between the accelerating dynamics of multipolarity which could increase the chances of conflict, and the growth of mitigating factors that should tend to dampen them and to improve the prospects for a continuing peace. This race is in its early stages and it is still too soon to pick a winner."[59]

For the foreseeable future, the United States is likely to remain as the most powerful actor in East Asia since it is the only truly global power. At the end of the day, notwithstanding criticisms on the pros and cons of U.S. strategy towards the region, the fact remains that regional stability would be impaired, perhaps substantially, if the United States were to withdraw its forward presence from the Western Pacific. In the post-Cold War era, however, and despite the fact hat the United States intends to remain fully engaged in the region, some have questioned whether the *relative* decline in U.S. military capabilities signals a longer-term trend towards incremental disengagement from the region.

More significantly, however, as the geostrategic focus shifts from Europe to East Asia, U.S. security objectives are bound to change from maintaining strategic stability writ large to "preclude in Asia the growth of rivalries, suspicions, and insecurities that could lead to war."[60] Closely connected with such an overall objective are three subordinate goals: (1) preventing the rise of a regional hegemon given that "any potential Asian hegemon would seek to undermine the role of the U.S. in Asia" and further, that "given Asia's human, technological, and economic resources, the domination of the region by a hostile power would pose a global challenge and threaten the current international order;" (2) maintaining stability since stability has been the bedrock of Asian prosperity and security; and (3) managing Asia's transformation with a special emphasis on influencing a range of events "so that they do not spiral out of control."[61] How the United States will be able to solidify such goals into viable policies remains to be seen but "assertive environment shaping" in the context of preserving and strengthening U.S. strategic interests in East Asia within the

[59] Aaron L. Friedberg, "Ripe for Rivalry: Prospects for Peace in a Multipolar East Asia," *International Security*, vol. 18, no. 3 (Winter 1993/94), pp. 27-28.
[60] Khalilzad, et. al., *The United States and East Asia: Toward a New U.S. Strategy and Force Posture*, p. xii.
[61] Ibid.

framework of rising Asian powers is likely to be even more challenging than the U.S.-Soviet rivalry of the Cold War.

5. East Asia's Strategic Choices and Regional Consequences

Quite apart from the fact that the United States is likely to remain as a viable Asia-Pacific power and unlikely emergence of a comprehensive peer competitor any time in the near-future, capability gains have been and continue to be made by most of the regional actors. Just how East Asia's strategic environment will evolve over the ensuing 15-20 years time frame remains highly uncertain but certain glimpses can be gained. The primary concern is focused currently on how the regional strategic equilibrium will be affected by a confluence of forces including, although not limited to, such factors as Russia's rapid decline, the continuing rise of China, Japan's prolonged stagnation, and the beginnings of an Indian take-off.[62]

In certain respects, twenty-first century Asia may come to resemble nineteenth century Europe. Asia, like Europe, will probably contain a group of big powers (including China, India, Russia, and Japan, with the United States playing a role across from the Pacific) as well as several somewhat less powerful, but still potentially quite capable actors (perhaps including a unified Korea, Taiwan, Australia, Vietnam, and possibly Indonesia)…If five hundred years of European history are any guide, the prospect of a multipolar system emerging in Asia cannot be an especially comforting one…*Whether or not Asia evolves into a truly multipolar system, with all of the accompanying pathologies and dangers, it does appear to possess in China a rapidly rising and potentially preponderant state…As they grow stronger, emerging powers typically seek to change the status quo, and sometimes to overthrow it, smashing old arrangements and replacing them with new ones that more accurately reflect their own conception of their proper place in the world.*[63] (Italics added).

[62] Ellings and Friedberg, *Strategic Asia 2001-02: Power and Purpose*, p. 10.
[63] Richard J. Ellings and Aaron L. Friedberg, *Strategic Asia 2001-02: Power and Purpose*, (Seattle, Washington: The National Bureau of Asian Research, 2001), p. 12.

According to a CIA report entitled *Global Trends 2015* some of the more salient issues includes the ability to manage new power relationships, the strategic goals that are likely to be espoused by China and other major powers in the region, and the military potential of China, Japan, and Korea (including a unified Korea). Insofar as the PLA is concerned, this report noted that it was not going to be fully modernized until 2015 although by that time, China could close the technological gap with the West in one or more major weapons systems. On the basis of "exploiting advanced weapons and production technologies acquired from abroad" China will be able to "integrate naval and air capabilities against Taiwan and potential adversaries in the South China Sea."[64] More alarming both for the United States and other regional actors (notably Japan and South Korea) is the expectation that China by 2015 will have deployed tens to several tens of missiles including survivable-land and sea-based mobile missiles as well as hundreds of shorter-range ballistic and cruise missiles for use in regional conflicts.[65]

The debate on whether China is likely to pose a significant strategic challenge to the United States as well as East Asia in general is a hot one with no clear end in sight. According to Ellis Joffe, "the buildup of the Chinese armed forces that feeds the U.S. perception of a military threat from a rising China will continue but the perception should be qualified by recognition of the restraints that limit the buildup."[66] He argues that China's military buildup is being driven in the short-term by three key missions. First, to deter a major conventional or nuclear attack on China by the United States. Second, to have the necessary forces to invade Taiwan if warranted. And third, "to prevent intervention by the United States if Beijing decides to impose reunification with Taiwan by force. While China's armed forces are probably adequate for the first mission, they are woefully inadequate for the second and third."[67] Insofar as Chinese air power upgrades are concerned, Joffe asserts that while it is true that the Chinese air

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[64] *Global Trends 2015: A Dialogue About the Future With Nongovernment Experts*, (Washington, D.C.: Central Intelligence Agency, 2000), www.cia.gov/cia/publications/globaltrends2015/index.html

[65] Ibid.

[66] Ellis Joffe, "Don't Exaggerate the Military Threat from China." *International Herald Tribune*, July 28, 2001.

[67] Ibid.

force is being modernized by purchases from Russia, licensed production of advanced fighter aircraft with Russian and Israeli technology, and more effective air defenses with Russian SAMS, "the Chinese are not implementing these programs on a crash basis, and most of them will not bear for years."[68] Conversely, others have noted that "what is most striking about this development is that the United States and its allies have accommodated themselves to Chinese power in Northeast Asia. Because of a continued U.S. regional presence, America's allies have not considered China's strategic power a threat to the regional balance.[69]

The key source of concern is that China is the primary candidate that could, if it so desired, acquire the requisite military capabilities that could prove to be destabilizing. For Beijing, one of the most undesirable outcomes is if Japan ultimately picks up the slack created by an eventual U.S. withdrawal or incremental disengagement. "China is determined that Japan not replace the United States as Asia-Pacific's dominant maritime power."[70] To this end, some have argued that China is in the process of pursuing a three-stage naval strategy. First, by the early 21st century, China would acquire a navy capable enough to establish sea control out to the "first island chain," or the area between Japan and the Chinese mainland and l line from Japan though Okinawa, Taiwan, the Philippines, and the Indonesian archipelago. Second, by 2020, China would acquire the capability to secure sea control out to the "second island chain" including the Bonins, the Marianas, and Palau. Third, by 2050, China would have a fully operational blue-water naval capability including aircraft carriers.[71] According to this line of thought, while the PLA Navy (PLAN) is constrained at the present time by technology and financial limitations, the key point is that China is committed to the longer-term creation of a blue-water navy with an emphasis on sea control just as the U.S. Navy is shifting its maritime strategy away from sea control.[72]

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[68] Ibid.
[69] Robert R. Ross, "Beijing as a Conservative Power," *Foreign Affairs*, vol. 76, no. 27 (March/April 1997), p. 34.
[70] Bernard Cole, "Asia at Sea," *Proceedings*, vol. 123 (March 1997), p. 36.
[71] Ibid., pp 36-37.
[72] For an interesting perspective on the potential for discord between the United States and China, see Lt. Cmdr. Ulysses O. Zalamea "Eagles and Dragons at Sea," *Naval War College*

One of the key areas that have gained increasing attention is the PLA Air Force's (PLAAF) concerted modernization efforts since the early 1990s, particularly significant Russian assistance. China concluded a deal with Russia to purchase 72 Su-30 MKK fighters with an agreement for licensed production of 250 more. It has also been reported that the PLAAF has started to receive delivery of some Su-30s.[73] According to one Taiwanese analyst, China's push for aircraft modernization stems from a confluence of factors including the following points. (1) strategic lessons from the Gulf War that convinced the Chinese military leadership of the critical role of air power in the conduct of modern limited warfare; (2) the rise of Russia as a crucial supplier in the post-Tiananmen environment; (3) China's continuing sovereignty claims over Taiwan and the Spratlys that highlights China's potential conflict areas on the country's coastal islands a corresponding shift from a military strategy that focused on a large-scale, nuclear war to local and more limited conflicts; and (4) the ability of the PLAAF to easily accommodate Russian fighters given the dominance of Chinese military hardware by Soviet manufacture and design.[74] Not surprisingly, the modernization of the PLAAF has also been a rising source of concern to India. A.K. Sachdev has written that a critical assessment of the PLAAF's on-going modernization efforts coupled with enhanced war-fighting capabilities indicates that "there is a definite trend towards a substantial qualitative improvement in the combat capability of the PLAAF starting from 2005 onwards by which time the Su-27 fleet would become effective and at least one more current development programme reached fruition stage."[75]

Despite continuing disagreement on the capabilities, intents, and strategic ramifications of China's air power modernization program, there seems to be a working consensus that for now, and in the short-term, PLAAF modernization programs may be constrained by strategic and fiscal factors that places an emphasis on "defense of distant territories" as its first priority that

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Review, vol. 89, no. 4 (Autumn 1996).

[73] Ming-yen Tsai, *China's Acquisition of Russian SU Fighters: A Great Leap Forward?* (Taipei: Taiwan Research Institute, 2001). www.dsis.org.tw/peaceforum/papers/2001-02/MM0102001e.htm

[74] Ibid.

[75] A.K. Sachdev, *Modernization of the Chinese Air Force*, (New Delhi: IDSA, 2000). www.idsa-india.org/an-sep9-8.html

includes "some fighters with advanced performance and avionics" but that "the general direction of the PLAAF modernization would, in the long run, lead to an air force able to meet its strategy, an air force ready to be 'modern rapid response force prepared for regional, limited wars.'"[76] Or as Jonathan D. Pollack has written, "slowly by inexorably, the Chinese are acquiring the requisite military capabilities that will enable Beijing to assume a more pivotal role in shaping the future security contours of East Asia. These capabilities are not fully realized at present, nor would they automatically translate into a more assertive state intent on intimidating its neighbors. But the emergence of China as a more capable military power is a core component of an ineluctable strategic realignment in East Asia."[77]

From the perspective of East Asia, the rise of China is a source of latent as opposed to a more immediate threat. Throughout the Taiwan Straits crisis of 1995-1996, almost all of the East Asian countries voiced opposition to China's "missile boat diplomacy" but their criticisms were aired both against China for demonstrating its military capability in such an open fashion as well as Taiwan for creating the grounds for Chinese animosity. Reactions to increasing Chinese capabilities and more aggressive policies (such as in the South China Seas) have varied. Most of the ASEAN states have chosen what one observer has characterized as "preemptive accommodation" whereas other Asian states have chosen to signal their concerns through "quiet diplomacy." While such policies could well be seen as a de facto acceptance of China's role in the region, virtually none of the regional actors are comfortable with the notion of a much more powerful China. The specter of an increasingly powerful China contributes to a new security dilemma for the region. None of the regional actors have the capability to unilaterally check Chinese ambitions although all of them harbor varying degrees of reservations on an increasingly robust Chinese presence in the region. In turn, while the "China threat" is not officially alluded to by the East

[76] Lt. Col. Patricia M. Fornes, "Modernizing China's Air Force: It's Strategy, Budget, and Capabilities," Unpublished M.A. thesis, (Maxwell Air Force Base, Alabama: Air War College, April 1995), p. 33.
[77] Jonathan D. Pollack, *Chinese Military Power and American Security Interests*, (Washington, D.C.: Center for International Political Economy, The Paul H. Nitze School of Advanced International Studies, Johns Hopkins University, May 2000), p. 25.

Asian states, no other strategic factor loom as large as the cumulative ascent of China.

The rise of China also entails significant challenges for Japan. Given outstanding historical, political, legal and alliance management constraints, Japan faces considerable obstacles in articulating a longer-term threat from China. But Japan is unmistakably concerned about the specter of a very powerful China.[78] So far, Japan has chosen to respond to potential crises in the region by updating and improving its national security planning infrastructure and by re-emphasizing the centrality of it alliance with the United States. In addition, Japan has quietly but undeniably embarked on a force modernization program over the last decade. As on analyst noted, "Japan's dense program will keep the Japan Maritime Self Defense force (JMSDF) the most powerful Asian navy, with the potential to expand if the United States eventually does withdraw."[79] Within 30 months, Japan could construct an aircraft carrier from the keel up and has some 200 F-15's in service that are carrier-compatible. According to a formal Australian defense attaché who was assigned to Tokyo, "if the requirement arose, Japan could produce a worked-up carrier battle within four years and another in the following year." Overall, while Japan currently has a relatively small force, it is "more able than any other in Asia to integrate large quantities of new weaponry."[80] Ironically, North Korea was primarily responsible for fueling Japan's turn to a more robust security posture, and in the process, has also led to greater policy coordination between the United States, Korea, and Japan. As the *Economist* commented after the August 1998 North Korean Taepodong-1 test launch:

North Korea's provocation [August 1998 missile test] stung Japan into joining America's new Theatre Missile Defence (TMD) programme…If it could be made to work (at present a big if), the TMD would be able to reach out across

[78] Over the last one hundred years, Japan has been the only East Asian country which directly contested China militarily and emerged victorious on both occasions. Unlike the late 1890s or the 1930s, China today is the strongest it has ever been in economic and military terms and is the only Asian power that can pose direct challenges to Japan's longer-term strategic interests.
[79] Cole, "Asia at Sea," p. 36.
[80] Ibid.

China to the borders of Mongolia and Tibet and over the South China Sea to Thailand, Malaysia, Indonesia and the Philippines.[81]

While it is impossible to predict just how the North Korean program will change Japan's long-term security perceptions and priorities, at a minimum, an already close security arrangement between the United States and Japan is likely to get stronger with greater emphasis on acquiring more advanced power projection capabilities.[82] As noted above, despite its quantitatively limited size compared to neighboring forces such as China and the two Koreas, Japan's SDF has grown into a very capable military force. "Tokyo already has most of the components of a large, modern military. Japanese naval forces are becoming skilled at fighting simulated battles abroad, as evidenced by a spate of recent exercises."[83] In September 2000 Japan took delivery of the first of 130 multirole F-2 fighter-bombers—an advanced version of the U.S. F-16 assembled in Japan and armed with Maverick ASMs. The F-2s will replace the aging F-1 fighters support 200 U.S.-built F-15s currently in service in the ASDF. After the United States, Japan has the largest navy in the Pacific and a concerted defense transformation has been underway since the mid-1990s. It has already in service four Boeing 767 AWACS that has improved the expeditionary capability of the ASDF with plans to procure four more Boeing 767 aerial refueling aircraft that will provide the land-based F-15s with increased ranges of up to 3,000 miles. As the *Financial Times* noted recently:

Japan's attempts to devise an international role for the SDF have met stubborn resistance from domestic politicians and alarm in capitals around Asia,

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[81] "Japan's Constitution," *The Economist*, February 27, 1999, pp. 24-25.

[82] After the signing of the U.S.-Japan Defense Guidelines in April 1996, both sides have moved cautiously on the question of enhancing bilateral coordination mechanisms. In December 1997, it was reported that Washington and Tokyo were looking into setting up a mechanism to coordinate policy and military deployments in the event of a crisis in East Asia. These and other efforts are likely to be expedited, or at the very least, given more serious consideration by the Japanese government in light of the North Korean missile test. For additional details, see "Crisis Planning," *The Oriental Economist*, vol. 65, no. 10, (December 1997), p. 16.

[83] Bryan Bender, "Self-Defense Forces May Soon Look Like a Modern Military," *Los Angeles Times*, June 10, 2001.

who fear any expansion of the SDF's capabilities would be a return to its militaristic past. The result is that for nearly 50 years, Japan has relied for its defence on the nearly 21,000 US troops stationed on its soil, at a cost to the Japanese government of nearly 257 billion Yen (2$ billion) a year. Now, however, support is growing in Tokyo for a fundamental review. Junichiro Koizumi, prime minister since April [2001], has spoken out strongly in favour of revising the constitution and exploring new roles for the SDF. In a notable break with his predecessors, Mr. Koizumi has also hinted that the SDF is a 'military' instead of a simply a 'force.'[84]

Even as Japan upgrades and modernizes its power projection and deterrent capabilities, there is little concern, for the moment, that Japan would not continue to maintain its central security arrangement with the United States owing to a combination of security, political, and military reasons. That said, as a recent RAND study indicated, Japan has moved to implement a more robust security policy on the basis of a "normal nation" status that enables the Japanese to see "both incentives and opportunities to diversify and deepen their political and security relationships across Northeast Asia while simultaneously enhancing technology programs and operational-policy linkages with the United States."[85] At the same time, however, the report also notes that these efforts point to over the next decade the emergence of a Japanese leadership "far more willing to chart its own course, with a far clearer concept of Japan's long-term national interests" and that "even though Japanese actions appear embedded in the prevailing framework of the bilateral alliance with the United States, *the evidence of shifting directions is palpable*. "[86] (Italics added).

Force modernization efforts in South Korea have proceeded fairly robustly since the 1990s. By 2003, the Ministry of National Defense is calling for a fundamental reappraisal of the ROK's defense needs and to move from that basis to the creation of a more robust but slim-downed force structure. Specifically, the plan calls for the ROK to field a force which will enable it to

[84] Alexandra Harney, "Japan Military Under Discussion," *Financial Times*, June 17, 2001.
[85] Khalilzad, et. al., *The United States and East Asia: Toward a New U.S. Strategy and Force Posture*, p. 114.
[86] Ibid.

continue to meet a spectrum of threats from the North while at the same time, adjusting to uncertain strategic trends in the region. It stresses the need for capabilities-based defense planning while forging strategic alliances which will enable the ROK to maximize its defense potential. Thus far, the ROK's defense modernization and force improvement plans have focused on the need to achieve parity with the KPA. Clearly, so long as the ROK continues to face a quantitatively stronger KPA, the need to narrow the "bean count" is understandable. The August 2001 "Mid-Term Defense Plan: 2001-2006" notes that the ROK Armed Forces currently stands at 79% of the KPA while this figure is slated to be increased to 88% by 2004 with the ability to target all sectors of North Korea with early warning and monitoring capabilities combined with strategic target acquisition and destruction capabilities through its next-generation fighter aircraft (FX), enhanced air defense (SAM-X), early warning aicraft (EX), and the KDX-3 cruisers.

By 2015, the *Basic Defense Policy Report* (published in February 1999) hopes to achieve seven major goals in order to move away from a North Korea-centric force improvement plan. Analysts note that while the ROK's efforts to match the KPA's key force outlays throughout the 1970s and 1980s was understandable, the net result was that the ROK was unable to develop a robust strategic plan to better need evolving defense needs. This is particularly true in the post-Gulf War era with the accelerated demand for information warfare capabilities, the expansion of battle space, new and more complex battle management demands, and RMA intensive weapons systems. The MND has argued that henceforth it will not only streamline the existing force, but to "drastically" reduce organizational inertia and redundancy. It plans to achieve this goal through the following areas: (1) information-dominant force structure; (2) enhanced maneuverability; (3) sea-based capabilities; (4) the need to field offensive-capable force structures; (5) air defense systems including ABM capabilities; and (6) improvement of artillery forces. The MND has provided five key reasons in order to justify the need for wide-ranging reforms in the South Korean armed forces.

As for North Korea, it has emphasized the development (and limited exports) of ballistic missiles for the past two to three decades as a critical component of its force improvement plan and in that period, North Korea has

managed to successfully develop, test and partially deploy medium- and long-range missiles.[87] North Korea's pilot missile program began when it became involved in a Chinese effort to develop the Dongfeng 61, a 600 km range ballistic missile in the mid-1970s.[88] However, while this program was ultimately aborted, North Korea continued to actively pursue Scud B technology to create a basis for its own in-house ballistic missile program. In 1981 North Korea received a small number of Scud Bs from Egypt and eventually succeeded in reverse engineered the system and first flight tested the Scud Mod A (a copy of the Scud B) in 1984.[89] As the August 1998 Taepodong-1 test launch illustrated, North Korea has attained significant know-how. "That launch demonstrated some important aspects of ICBM development, most notably multiple-stage separation. While the [U.S.] intelligence community expected a TD-1 launch for some time, *it did not anticipate* that the missile would have a third stage or that it would be used to attempt to place a satellite in orbit." (Emphasis added).[90] To be sure, the North still faces problems with the third stage so that it will take time before it is able to develop ICBM capability (over 5,500 km) but the test amply showed North Korea's inherent long-range ballistic missile capability.

In essence, one of the most interesting elements of North Korea's missile program is the fact that it continues to expand its missile forces (such as the long-range Taepodong-1) in the aftermath of the historic South-North summit and interim agreement with the United States to suspend long-range missile tests in September 1999 and June 2000. From North Korea's vantage point, its missile forces provide a strategic buffer against progressively worsening correlation of forces and also as a shield against external pressures such as globalization and the information revolution. North Korean missiles also provide the regime with political leverage since it thrives on pushing the strategic envelope through the perpetuation of crises, that in turn enables the regime to maintain iron-clad rule at home. South Korea, the United States, and Japan (the three major countries affected most directly by North Korean missiles) agree that North Korea's

[87] *Proliferation: Threat and Response*, p. 8.
[88] *Ballistic Missile Briefing: North Korea*, (Lancaster: Center for Defence and International Security Studies, October 25, 1997), p. 1. (Internet edition).
[89] Ibid.
[90] William S. Cohen, *Annual Report to the President and the Congress 1999*, (Washington, D.C.: U.S. Government Printing Office, 1999), p. 41.

missile threat is an extremely serious one given North Korea's ability to use chemical or biological warheads. The possibility cannot be discounted that North Korea could ultimately opt to negotiate away its missiles in return for significant economic assistance from South Korea, the United States, and Japan. If a comprehensive arms control agreement can be reached between the two Koreas with stringent verification and on-site inspection regimes, the possibility exists that North Korea's as well as South Korea's limited ballistic missile forces could be dismantled. Nevertheless, such options are bound to face tremendous obstacles, not least from the North Korean armed forces since they place significant leverage on ballistic missiles. The North Korean missile issue has brought to the fore new security dilemmas for South Korea, the United States, as well as Japan.

6. Conclusion

Although the interplay of diverse forces complicates an accurate assessment of the East Asia's longer-term strategic environment and the types of military conflicts that could erupt, on going trends suggest that force modernization based on selective RMA technologies will continue. In this regard, Bracken's prognosis of a so-called "second nuclear age" is perhaps too pessimistic since he implicitly assumes that East Asia's absorption of strategic weapons systems could be inherently destabilizing compared to the "stabilizing" role of Western military power although his insights, if they indeed materialize, could have profound implications for regional stability.

A sweeping change is occurring in the structure of international security, distinct from the particular ambitions of individual countries. The structural features are the capacities of the countries in Asia to strike at a distance beyond their borders; to quickly escalate the potential for violence in a crisis; to manipulate the threat of nuclear attack for political benefit; and to undermine or actually destroy the key foundations of military power in Asia. *These are ineluctable, long-term trends*.[91] (Italics added).

[91] Bracken, *Fire in the East*., p. 149.

Nevertheless, the strategic contours of Northeast Asia are changing with an emphasis on three key areas: enhanced power projection capabilities, incrementally increasing asymmetric capabilities, and more robust indigenous national security strategies. This is not to suggest that major power rivalries will necessarily lead to greater regional instability, and in the worst case scenario, to military conflicts. As Paul Dibb cautions, "we should learn from previous failures of assessment and refrain from overconfident, straight-line extrapolations."[92] But he also points out some of the more salient features of East Asia's strategic rise including the following points. First, the spreading of the RMA phenomenon to Asia including the introduction of longer-range and more accurate weapons supported by enhanced surveillance information so that "the geography of Asia will be compressed." Second, the proliferation of ballistic missiles may enhance security invulnerabilities, particularly in the smaller Asian states and correspondingly, either ballistic proliferation will escalate or "the acquisition from the United States of a missile defense system" that may well mean the rise of the most acute proliferation challenge for the United States. Third, while long lead-times are necessary for any major weapons system to become fully operational, "capabilities in many instances can change quickly through the acquisition of quite limited numbers of relatively cheap, long-range, and accurate tactical missiles." And fourth, while fielding modern air forces and navies are becoming increasingly expensive "newer platforms are in many instances able to deliver more lethality and firepower."[93] Underlying such developments is the very much transformed East Asian security template since the end of the Cold War, most notably in the decreasing need for strategic cooperation between the United States and China absent a common security threat in the form of the former Soviet Union. As Robbyn Lim has stated, "now China, freed from threatening Russian forces to the north and in Soviet client Vietnam to the South, is expanding its strategic reach east and south by claiming

[92] Paul Dibb, "Strategic Trends: Asia at a Crossroads," *Naval War College Review*, (Winter 2001), www.nwc.navy.mil/press/Review/2001/Winter/art2-w01.htm
[93] Ibid.

rights over the whole South China Sea and increasing its influence in Southeast Asia."[94]

As East Asia inevitably rises from half a century of strategic hibernation, managing security transitions are likely to be more volatile, more complex, and potentially more dangerous given that intent, rather than capabilities will be the driving force behind much of the regional powers political and strategic ambitions. If the United States has been able to sustain its role as the preponderant Pacific military power on the basis of its cumulative power projection capabilities, it may come under increasing competition from China and the desirability, however limited at the present time, of more independent security postures on the part of Japan and South Korea. The acquisition of comprehensive power projection capabilities on the part of key East Asian states suggests that at a minimum, greater constraints will confront the United States in maintaining strategic presence but more importantly, in help shaping a security environment more conducive to its and its allies' interests. There is little doubt that no East Asian power, including China, will displace the indispensable role of the United States any time in the near-future. That said, there is also little doubt that over the next 20 to 30 years, the cumulative rise of China cannot but shift geostrategic preferences not only of China, but that of the United States and its key allies in the region. Perhaps most importantly, historical parallels fail to serve as adequate guidelines in that China, Japan, and Korea have never acquired modern military capabilities at the same time. As noted in a previous section, Europe's debilitating experience with a multipolar balance of power up to the outbreak of World War I could serve as a guide but here one must caution the applicability of 19th century European angst with 21st century East Asian equivalents.

By way of summary, mention should be made of a silver lining in the on-going march towards enhanced strategic capabilities, namely, the growing incentives for economic and political cooperation based on the increasingly interlocking and interdependent nature of the East Asian economies with the global economy. Outbreak of a major war on the Korean Peninsula, in the Taiwan Straits, or a severe crisis in the South China Seas to name but a few of

[94] Quoted in David Lague, "A Growing Storm for East Asia," *The Far Eastern Economic Review*, May 17, 2001, p. 17.

the more probable causes of conflict would have severe economic and political repercussions. But however future East Asian governments and leaders choose to refine their respective national security strategies, coping responsibly with more viable and destructive military capabilities is something that cannot be transferred either from history or from other regions, in other words, it has to be self-taught to become enduring and institutional. Thus, the real challenge for East Asia over the next two to three decades does not lie in accumulating more advanced military capabilities since this is already self-evident. Rather, the more relevant task lies in taming, to the extent possible, new power capabilities with potentially disruptive national strategies, foremost on the part of China as it seeks to regain its "rightful" strategic presence in East Asia.