
COERCION AND AIR POWER

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Coercion has been the subject of many a study. To coerce an adversary's thought process and actions to one's own advantage is its end game. Paradoxically, there needs to be a confluence of interests for discord to occur.¹ Coercion is not necessarily of the military kind only; in fact, a host of other measures constitute many permutations of actions that can be used to coerce an adversary's decision making calculus. The North Vietnamese took on the American military might in their unification effort and movements and groups like Hamas and Hezbollah periodically fight the Israelis despite the military asymmetry that exists between the two; and the indigenous Afghan, in the long run, was not overawed, first by the might of the Soviet Union and then the Americans. In fact, one study suggests that the initiation of approximately 30% of conflicts has been done by the weaker party.² Why does this happen and where does air power fit in the equation?

It is important to clarify at this stage the use of the term 'coercion.' Coercion has two parts, namely, deterrence and compellence.³ While Air Vice Marshal **Manmohan Bahadur** is a Distinguished Fellow at the Centre for Air Power Studies, New Delhi.

1. Thomas Schelling, *The Strategy of Conflict*, (London: Oxford University Press, 1970), p. 11. Schelling wrote, 'The deterrence concept requires that there be both conflict and common interest between the parties involved; it is as inapplicable to a situation of pure and complete antagonism of interest as it is to the case of pure and complete interest. Between these extremes, deterring an ally and deterring an enemy differ only by degrees.'
2. Barry Wolf, *When the Weak Attack the Strong: Failures of Deterrence*, as cited by Adam B Lowther, ed. *Deterrence: Rising Powers, Rogue Regimes and Terrorism in the Twenty First century*, (New York: Palgrave Macmillan, 2012), p. 7.
3. Thomas Schelling, *Arms and Influence*, (New Haven, Connecticut: Yale University Press, 1966), p.70 (pp.70-91).

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purists draw a rigid difference between the two⁴ the term coercion is more representative of the 'inducement' or the 'lean-on' that deterrence as well as compellence exert in their individual spheres. Patrick Morgan has, in fact, called deterrence as being composed of 'general' and 'immediate' deterrence. While the former has a wide expanse in terms of time, the latter refers to an environment that requires immediate action to rectify an event that has happened or is going to happen.⁵ Immediate deterrence comes close to compellence with hardly a line delineating the two. Thus, there is an overlap in real life which enjoins a researcher to "...put less emphasis on the difference between deterrence and compellence and instead treat them as inter-related components of coercive diplomacy."⁶ A similar view is expressed in a 1999 RAND study and the term coercion is used to denote a state where, '...threat of force is used to manipulate an adversary's decision making calculus.'⁷ So, hereafter, the term coercion would be used in this paper, the coercive ability of air power.

The development of air power in the past century has been extraordinary, unmatched in the span of improvements in its reach, responsiveness, lethality and precision. The galloping advancements in technology, a virtual transformation every decade, are revolutionizing air power and through it, warfare itself. The target of coercion in military applications has however not changed, which is the human mind, as an adversary takes a decision which is influenced by a host of military and non-military factors; amongst the military causes is the punishment or a threat of punishment. The severity and impact of the punishment is dependent on many factors like its novelty, lethality, surprise, duration of application and frequency of re-application.

4. Ibid., pp 70-91.

5. Patrick Morgan, *Deterrence Now*, (Cambridge: University Press, 2003), p. xvi.

6. Ibid., p. 3.

7. Daniel L Byman, Mathew C Waxman and Eric Larson, *Air Power as a Coercive Instrument* (Santa Monica: RAND, 1999), p. 32.

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Even with all these factors remaining constant, the reaction would differ from one opponent to another and even of the same opponent when variations get introduced in one or more of the listed parameters. The 'type' of adversary is also an important determinant in judging the efficacy of deterrence, especially when using air power, as nation states have physical possessions while non-State actors hold ideologies and beliefs. While attacking physical targets with air power is straight forward, how does one attack a belief or ideology with the use of 'air'? Possibly, influencing the human mind (of the non-state actor) with modern air power's lethal attributes so as to emphasise the futility of taking up arms for his belief could blunt the passion of his ideology. But is it possible with individuals and movements who are fanatically devoted to their cause or belief, as most non-state actors are? It is important to understand coercion as applicable in the case of air power because, though there have been notable successes of its application in the 'military' sense, the final aim of getting the adversary to do its (the coercer's) bidding has not always been achieved through its employment. This is, because in the 'strategy' of war, the event (war) is not a constant-sum game as in game theory but a variable one, as "...the sum of the gains of the participants is not fixed so that more for one inexorably means less for the other."⁸

Coercion is an intangible used by governments, and air power is one of its important tool. This essay will study air power's track record as an instrument of coercion and would attempt to crystal gaze whether it would be effective in the contemporary world and in the milieu of the foreseeable future. The ambit of the study would be limited to the conventional sphere only (as against a nuclear milieu).

This paper analyses the subject in five sections. The first outlines the changes in the battlefield brought about by the introduction of the flying

8. Schelling, n.1, p. 5.

machine and the second covers the impact of the early air power theorists on its development. The third part studies the different nuances of coercion theory and analyses its various interpretations. The employment of airpower as an instrument of coercion constitutes the fourth section followed by the study of its usage as a political tool against different types of adversaries. The paper concludes by summing up the issues raised and evaluated in the paper.

AIR POWER AND THE BATTLEFIELD

War has undergone a transformational change down the ages. The transformation has come about due changes in the two facets that constitute it; firstly, the nature of the adversaries and secondly, the arena in which the contest takes place. Advances in technology have had a defining influence on the changes in these two aspects..

In the modern world, the adversary that beckons a coercer has three forms. Firstly, opponents who could be nation states with modern armies; secondly, 'movements' and non-state actors living in stone age conditions (figuratively speaking) but with access to modern weapons and means of communications. While the former have known state institutions the latter are more amorphous but with access to technologically savvy human resource motivated due ideological or religious affinity; these combine to form, in the latter case, an opponent who lives off the land, has no material holdings whose loss affects him adversely and who does not mind (and sometimes volunteers) losing his life for a cause. The unique power of the 'dispossessed,' if these non-state actors can be termed as such, has been utilized by many nation states to further their own cause; this grouping of states and non-state actors constitutes the third type of opponent, a hybrid adversary that is being increasingly seen in the battlefield of contemporary conflicts. Pakistan is a case in point of the third type, as it utilizes terrorist organizations like the Lashkar-e-Toiba and Hizbul Mujahideen in its

proxy war against India.⁹ War, thus, has this unique contestant now, an amalgamation of a Westphalian state and a non-state actor(s), which uses the intrinsic attributes of anonymity, subterfuge and deniability associated with such actors to alter the nature of the battlefield.

What is a battlefield but an arena of a clash of interests which takes on a Clausewitzian variation of 'politics by other means.' The battlefield itself has undergone a radical change from massed armies equipped with bows and arrows to one now with armoured fighting vehicles. The scenario has been similar on the seas with the nature of propulsion changing from manual to nuclear through many stages and firepower too reaching the cruise missile and ballistic missiles levels with conventional and nuclear warheads. These transformations have taken centuries whereas, just within the past one hundred years following the Wright Brother's first flight in 1903, the contest in air has been revolutionized by mind boggling advancements in technology, thanks to rapidly increasing computing power and cutting edge technologies in research, design and manufacturing. The opening up of space has added a new dimension to the contemporary and future battlefield. Almost two decades back the Commander-in-Chief of the US Space Command said that in the not so distant future, "... space will have evolved to the point where the movement of terrestrial forces will be accomplished only at the pleasure of space forces, much the same way that the movement of land and sea forces today can only be accomplished at the pleasure of air forces."¹⁰

A debate has been ongoing about the span of air power, i.e., whether it encompasses space also. In fact, it has its origins way back in 1946 when, "...a group of US *naval* (emphasis added) officers who had been conducting a satellite feasibility study sought to carve out a leading role for the navy

9. Nadim Asrar, "Barack Obama says Pakistan-based Lashkar-e-Taiba a worldwide terror threat: sources," <http://www.ndtv.com/article/india/barack-obama-says-pakistan-based-lashkar-e-taiba-a-worldwide-terror-threat-sources-424866>, accessed January 26, 2014.

10. Gen. Howell M. Estes III, commander in chief of US Space Command and commander of US Air Force Space Command, quoted in John T Correll, "Destiny in Space," *Air Force Magazine*, August 1998, p. 2, <http://www.airforcemag.com/MagazineArchive/Documents/1998/August%201998/0898edit.pdf>, accessed January 14, 2014.

in pursuing military satellite development."¹¹ Turf wars led to the setting up of the US Space Commission in October 2000 which ruled that the USAF was managing the nation's military space well and that there was no need to set up an independent US space service. However, it rejected the USAF's contention that, 'air and space represented a single aerospace continuum and concluded that space was a separate and distinct mission area warranting separate and dedicated organizational and funding support."¹² The British Air and Space Power Doctrine states that, "Air power's fundamental attributes make precise definitions problematic....In the future, advances in technology and the restructuring of organisations and processes are likely to blur the boundaries between the air and space environments,..... *Until that point is reached* (emphasis added), space power is best regarded as being separate, but complementary to air power,"¹³ The Basic Doctrine of the Indian Air Force states that, "An important aspect of modern air power is that it is really an 'air and space power," (acknowledging that, at present, there is no *aerospace* power) but that the line demarcating 'air' and 'space' is thin.¹⁴ Hereafter, the term 'Air Power' would be used as a generic expression when addressing warfare in the third dimension; special attributes of space, where required to be evaluated and emphasized alone, would be discussed as such.

EARLY AIR POWER THEORISTS AND COERCION

Air power has references dating back to mythological times; while Indian epics talk of the 'Pushpak' *viman* (aircraft) of Lord Ram, stones are said to have been thrown by the Lord from '...Heaven on Joshua's Canaanite

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11. Benjamin S Lambeth, *Mastering the Ultimate High Ground: Next Steps in the Military Uses of Space*, (Santa Monica, CA: RAND, 2003), p. 10.
 12. *Ibid.*, p. 4-5. To read the Space Commission Report see, *Report of the Commission to Assess United States National security Space Management and Organization*, January 11, 2011 available at <http://www.dod.gov/pubs/space20010111.html>, p. 34, accessed January 18, 2014.
 13. British Air and Space Power Doctrine: AP 3000 Fourth Edition, available http://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf, p. 13, accessed January 15, 2014.
 14. *Basic Doctrine of the Indian Air Force: IAP 2000-12*, (New Delhi: Air Headquarters New Delhi, 2012), p. 23.

enemies.¹⁵ Though much is being made now of the doctrinal changes being ushered in through unmanned aerial vehicles and the pivotal role they would exercise on the future battlefield, air power actually made its advent in human conflict in 1849 through unmanned vehicles in the form of Montgolfier balloons when, during the siege of Venice, 200 of them were launched with a bomb each with the fervent hope that they would cause damage when they came down.¹⁶ It is interesting to note that even then, 'air power' (balloons) had a deterrent effect as witnessed in the American Civil War when the balloons of the North caused the Confederate soldiers to move during the night to avoid detection.¹⁷ However there were opposite views too, as in the 1898 Cuban campaign, with Theodore Roosevelt dismissing its utility as being '...worse than useless.'¹⁸ Manned heavier than air flight after 1903 quickly saw the arrival of aviation in combat in the 1911 Italo-Turkish war when grenades were dropped by hand by Italian pilots;¹⁹ there has been no looking back thereafter.

World War I (WW I) heralded the birth of air power theorists. Brig Gen Douhet of Italy had noted the enormous potential of 'air.' Writing earlier, in 1909, as a young Major he wrote, 'If there are nations which can exist untouched by sea, there are certainly none which exist without the breath of air. In future, then, we shall have three instead of two separate and well defined fields of battle;...We are fully conscious today of the importance of having command of the seas, but soon the command of the air will be no less important.'²⁰ Douhet prophesied air power as the harbinger of a capability that could win war alone by its coercive capability of bombing the will of the adversary. The 'bomber will always go through' was his bottom line and he visualised in his 1921 book, 'Command of the Air,' a

15. Martin van Crevald, "The Rise and Fall of Air Power," in John Andreas Olsen, ed, *A History of Air Warfare* (New Delhi: Vij Books India Ltd, 2010), p. 351.

16. "Remotely Piloted Aerial Vehicles: An Anthology," available at www.ctie.monash.edu/hargrave/rpav_home.html, accessed November 18, 2013.

17. J A Hennessy, "The United States Army Air Arm, April 1861 to April 1917," as cited by Martin van Crevald, "The Age of Air Power," (New York: Public Affairs, 2011), p. 8.

18. T Roosevelt, "The Rough Riders", as cited by van Crevald, n. 15, p. 9.

19. http://www.century-of-flight.net/Aviation%20history/up%20to%20WW%201/first_bomb.htm, accessed on December 18, 2013.

20. Giulio Douhet, *The Command of the Air*, Edited by Joseph Patrick Harahan and Richard H Kohn, (Tuscaloosa, Alabama: The University of Alabama Press, 2009), p. 27.

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vanquished adversary submitting to the demands of the coercer after the summary collapse of the national will to fight due punishment inflicted by massive (strategic) bombing of the civil populace and infrastructure.²¹ It had its effects of sowing panic among the British civilian population;²² that this did not succeed in WW II is a different question but if ever there was a die-hard believer in the raw coercive ability of air power, it surely was Douhet.

Across the English Channel in Great Britain, Hugh Trenchard took over the Central Flying School of the Royal Flying Corps (RFC) and trained aircrew to man RFC flying units in WW I. After the war he was appointed the Chief of the Air Staff of the fledgling Royal Air Force where, '...the major occupation for Trenchard and his staff was defending the RAF against army and navy attempts to have it abolished.'²³ His contribution to air power doctrine was one of advancing the concept of air superiority. That he too had agreed with Douhet's concept of strategic bombing is as much a fact as also an enigma as to his acceptance of this idea that was not reflected in his earlier writings. However, some writers find a difference between the target of strategic bombing of the two theorists; while Douhet wanted to bomb the civilian population centres directly, Trenchard wanted vital industrial and communication target to be attacked resulting in the civilian population pressurizing the government to negotiate.²⁴ Later though, he did write about the futility of strategic bombing and the colossal waste in terms of costs and lives lost with little to show as result.²⁵

21. Douhet, n.20, p. 10.

22. Lee Kennett, *The First Air War, 1914-1918* as cited by David R Mets, *The Air Campaign: John Warden and the Classical Air Power Theorists*, (Maxwell Air Force Base Alabama: Air University Press, 1998), p.1.

23. David R Mets, *The Air Campaign: John Warden and the Classical Air Power Theorists*, (Maxwell Air Force Base, Alabama: Air University Press, 1998), p.22.

24. *Ibid.*, p.22.

25. H. M. Hyde, *British Air Policy Between the Wars, 1918-1939* (1976) as cited in Oxford Dictionary of National Biography, Vincent Orange, "Trenchard, Hugh Montague, first Viscount Trenchard (1873-1956), *Air Force Officer*," <http://www.oxforddnb.com/view/printable/36552>, accessed 29 Dec 13.

On the other side of the Atlantic, in America, 'Billy' Mitchell was propagating ideas very similar to Douhet and Trenchard. In his view too, the bomber would always get through (though he believed in the equal utility of the pursuit and the attack plane), that air power was best understood by an airman and that the creation of a separate air arm of the armed forces was necessary. He visualised breaking of the civilian morale by attacking industrial, infrastructural and even agricultural targets.²⁶ Thus, all three pioneers of air power theory attested to the view that air power had the capability to coerce an adversary by lowering the morale of the civil population. Though their recommended target sets were different, air power was seen as the decisive force to strike where it hurt the enemy the most. They, however, made one basic omission and that was not giving 'air defence' its due; all three were not perceptive enough to visualise that down military history, the advent of a new 'weapon' has always resulted in its counter being developed. Thus, WW II demonstrated the short falls in their predictions with the advent of the radar, first ground based and then its airborne version, and the true air defence fighter that put paid to the 'invincibility' of the bomber in coercing the adversary to sue for peace.

The developments post WW II saw the arrival of the jet age, while new technologies enhanced the reach, speed and destructive capability of air power. New and rapid developments in radars, avionics and optronics enabled precision to be fine tuned to figures as low as a couple of metres while synergisation with space assets brought about a revolution in military affairs that enabled Effects Based Operations (EBO). The 'networking' of ground, air and space assets has introduced the concept of Network Centric Warfare (NCW) where the transparency of the battlefield enables the war fighter to become a clinically efficient killing machine, if he so chooses. These

26. David R Mets, *The Air Campaign: John Warden and the Classical Air Power Theorists*, (Maxwell Air Force Base Alabama: Air University Press, 1998), p 34.

developments over the past five decades have seen rapid improvements in the lethality and precision of air power through Korea, Vietnam, the 1991 Gulf War, Iraq and Afghanistan. Col John Warden's five concentric rings and the theory of analyzing the enemy as a system for planning an air campaign²⁷ made air power a seductive weapon in the hands of the politician who thought that a weapon for avoiding a ground campaign or at best, conducting a short swift one, had been found; this would help avoid own casualties and address the issue of the increasing casualty sensitivity. However, this was not to be as seen in the prolonged warfare and bloodletting in Iraq (twice over), Afghanistan and Bosnia Herzegovina, as the enemy was different in its composition in each case.

Israel's Bekaa Valley campaign in 1982 heralded the employment of Unmanned Aircraft Systems (UAS) which soon became all pervasive in the modern battlefield. In fact, the battlefield itself would perhaps need to be re-defined very soon if one considers that UAS operators are 'flying' operational sorties sitting in the American continent and delivering lethal weapon strikes on targets in Yemen, Pakistan, Afghanistan or anywhere in the world. Soon, with artificial intelligence marrying up with UAS in around two decades time, autonomous operations of unmanned systems with the power to decide usage of lethal force,²⁸ would bring in an element of surrealness that would require ethics in warfare to be redrafted. Events, thus, seem to be coming a full circle in the 21st Century with advancements in stealth being incorporated in long range bomber technology as part of the Air-Sea Battle concept²⁹ of the United States and hypersonic velocity research for manned (optionally) aircraft; Douhet, it appears, is making

27. John A Warden, *Air Campaign: Planning for Combat*, (Washington DC: Pergamon-Brassey's International Defence Publishers, 1988).

28. *United States Air Force: Unmanned Aircraft Systems Flight Plan 2009-2047*, (Washington DC: Headquarters United States Air Force, 18 May 2009).

29. *Air-Sea Battle: Service Collaboration to address Anti-Access and Area Denial Challenges*, Version 9.0, <http://www.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf> accessed January 18, 2014.

a comeback!³⁰ There is, however, a counter view expressed by Air Vice Marshal Tony Mason, who quotes the USAF 1991 Gulf War Air Power Survey and writes, “..the same American survey summarises the ‘strategic core’ of the Gulf War campaign with an objectivity that should lay Douhet, even a precisely-guided Douhet, to rest for good.”³¹ This aspect would be dealt in more detail later in this paper as air power’s role in coercion is analysed.

COERCION AND THEORY OF DETERRENCE

The Chi of Coercion

Coercion is about altering costs and benefits in the calculations of the adversary. Thomas Schelling has written that, “To be coercive, violence has to be anticipated. And it has to be avoidable by accommodation. The power to hurt is bargaining power. To exploit it is diplomacy-vicious diplomacy, but diplomacy.”³² This assertion of the authority of ‘bargaining power’ encompasses the chi of coercion. It links air power to coercion, for, what is air power if not (potential) violence, which when sheathed is the ‘anticipation’ that Schelling wrote about and an instrument of ‘punishment’ that would follow, when unleashed. As the British Air and Space Power doctrine puts it, “It provides an ability to coerce an adversary by holding him at continuous risk. The demonstrable capability to attack an adversary underpins a graduated range of credible threats, from diplomatic warning and military signaling, including operational and tactical level non-kinetic demonstrations of power, through to the actual use of force.....However, the ultimate goal at the strategic level of warfare is to influence an adversary to follow a desired course of behaviour. In this sense, air attack is always a means to an end, but air power’s ability to escalate the use of force in easily

30. Mets, n. 23, p. 63. Mets writes “At least for the time being, the bombers with stealth can get through with acceptable losses. Now bombers with PGM can get results as fast as Douhet had dreamed. A target can be taken out with far, far fewer bombs than in earlier eras. PGM makes strategic attack all the more feasible, and even makes parallel attack possible in many cases.

31. Tony Mason Air Vice Marshal, *Air Power: A Centennial Appraisal*, (London: Brassey’s, 1994), p. 273.

32. Schelling, n. 3, p. 2.

controlled steps means that it has become an increasingly important element of coercive strategies.”³³ The Indian Air Force Doctrine also, talking about the coercive capability of air power, states that, “...diplomacy has emerged as the first option for both power projection and conflict resolution, albeit with military power to back it up with deterrence and coercive capability.”³⁴

Successful coercion has no fixed template; its quality and success depends on a number of factors. While military capability, staying power and training of personnel of the coercer are obvious boxes to be ticked, the communication of the coercive intent and the credibility of the coercer (to carry out the threat) in the eyes of the target of coercion is an intangible that would be the final arbiter for the target to abide or not to abide by the coercer’s diktat.³⁵ Equally incumbent on the coercer is the requirement to have good and timely intelligence of the adversary regarding what he values as important and worth going to war for so as to craft an appropriate strategy to coerce him successfully. Iran and Iraq went to war in the 1980s as each thought poorly of the other in terms of motivation and war waging capability. In the Vietnam War, the Americans spent a large amount of ordnance and effort to interdict the North’s transportation network, especially the Ho Chi Minh trail through which the Vietcong were getting their supplies to the South. In the event, the colossal effort was a waste as the guerillas needed only a small amount of material for their sustenance.³⁶ Other factors that come into play include terrain, which aid the adversary in protecting himself for interdiction from the air. While examples for terrain

33. British Air and Space Power Doctrine: AP 3000 Fourth Edition, http://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf, p. 51, accessed January 07, 2014. Explaining the strategic effect of airpower, the Doctrine quotes the bombing carried out on Stanley airfield in the Falkland War by a Vulcan B2 bomber on the night of 30 April 1982. Supported by Air to Air refuelling, the Vulcan dropped twenty-one 1,000lb bombs cratering the runway and denying its use to Argentinean fast-jet aircraft. In effect, it also demonstrated Britain’s capability to attack at huge ranges, potentially threatening the Argentine mainland and resulting in an Argentinean redeployment of air assets away from the Falklands ‘denying their potential use in the rest of the conflict.’

34. *Basic Doctrine of the Indian Air Force: IAP 2000-12*, (New Delhi: Air Headquarters New Delhi, 2012), p. 120.

35. Patrick Morgan has defined credibility as, “...the quality of being believed,,,,; it was not a state’s capacity to do harm that enabled it to practice deterrence, it was others’ belief that it had such a capacity.” Morgan, n. 5, p.15.

36. Byman, et al, n. 7, p. 45.

from Korea, Vietnam and Afghanistan (Soviet occupation period) are many, the most famous recent one was from the initial period of America's attack on the Taliban in Afghanistan. In December 2001, Taliban fighters, including Osama bin Laden, hid in the Tora Bora caves and successfully evaded American air power to eventually escape into Pakistan.³⁷

Effect of Time

Time too plays an important role where its availability to the target of coercion helps him negate the aims of the coercer, as happened in the Tora Bora case itself and in the escape of bin Laden. The developments taking place in the US in the concept of Conventional Prompt Global Strike (CPGS) are a step towards addressing the time factor from the moment of sensing of a target and its engagement by air power within an hour anywhere on the globe. A Carnegie Endowment study says that while CPGS has many connotations in studies of coercive use of air power, both positive and negative, the aspect of increased deterrence for its exponent and assurance for the allies is a given.³⁸ A US Congressional Research Study report, quoting the 2010 National Posture Review of the US says that, '.... (the Review) viewed PGS as an important component of U.S. regional deterrence capabilities when it noted that "these capabilities may be particularly valuable for the defeat of time-urgent regional threats."³⁹

Op Parakram launched by India following the attack on the Indian Parliament in December 2001 is an example where extended time comes to

37. John F. Kerry, *Tora Bora Revisited: How We Failed to Get Bin Laden and Why it Matters Today, A Report To Members of the Committee on Foreign Relations, United States Senate, First Session, November 30, 2009*, (Washington DC: US Government Printing Press, 2009), <http://www.gpo.gov/fdsys/pkg/CPRT-111SPRT53709/html/CPRT-111SPRT53709.htm>, accessed December 31, 2013.

38. James M Action, *Silver Bullet? Asking the Right Questions about Conventional Prompt Global Strike*, (Washington DC: Carnegie Endowment for International Peace, 2013), p.113, available <http://carnegieendowment.org/files/cpgs.pdf>, accessed December 31, 2013. The Study states that "CPGS might make potential adversaries more wary about transgressing key interests of the United States and its allies, thus enhancing deterrence and potentially also the assurance of those allies."

39. Amy F. Woolf, "Conventional Prompt Global Strike and Long-Range Ballistic Missiles: Background and Issues," <http://www.fas.org/sgp/crs/nuke/R41464.pdf>, 26 April 2013, p. 4, accessed December 31, 2013. The Report further quotes James Miller (on page 8), the US Undersecretary of Defense for Policy, stating In February 2012, that "programs like CPGS could help strengthen U.S. non-nuclear forces as a part of the U.S. deterrent."

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the aid of the target of coercion in ameliorating its effects. Op Parakram set in motion the mobilization of the Indian armed forces and was launched to coerce Pakistan into clamping down on the terrorist network flourishing within its borders. The operational deployment continued for ten months but failed in its larger aim of getting Pakistan to stop aiding the terrorists.⁴⁰ While India may have come out with the aura of a nation that is mature in its thinking and response, the fact remains that the extended duration of the exercise, while imposing high financial costs on Pakistan, did not help the coercive effect sought by India, as Pakistan's leaning towards the militants remained (and remains) undiminished.

Capability, Perception and Coercion

Is the success of coercion dependent on the technical prowess of the adversary it is addressing? Coercion, in the final analysis, is a mind game. It is a game of 'chicken,' where both sides plan to play their cards to make the opponent accept their own terms. History has been witness to the fact that technical 'backwardness' has not forced contestants to concede to the coercer's terms. The technically and logistically 'backward' Vietcong and the North Vietnamese did not give-in to the American assault; a similar script is playing out for the Americans in Afghanistan, as it did there for the USSR earlier. In the 1950s, the North Vietnamese had not been coerced by the French military might just as the Algerians had not been brow beaten earlier by the same colonial power. Military dictatorships and autocracies too have had a history of standing up to technologically superior adversaries, even at the cost of their lives; Saddam Hussein, Gaddafi (against the NATO

40. There are many analyses of Op Parakram. One reason for failure is the fact that the adversary was also a nuclear weapon state. For e.g., see Seminar report of Institute of Peace and Conflict Studies: Coercive Diplomacy: Operation Parakram: An Evaluation, <http://www.ipcs.org/seminar/indo-pak/coercive-diplomacy-operation-parakram-an-evaluation-577.html>, August 30, 2003, accessed January 01, 2014.

grouping), al Qaeda and Prabhakaran (of LTTE against Sri Lankan forces) are recent examples. These examples also hold up for the fact that military asymmetry is also not the arbiter in coercion but what determines its success or failure is the credibility of the coercer in the eyes of the target of coercion.⁴¹ Perceptions have a major effect on the success or failure of coercion, independent of the technological prowess and/or the military asymmetry that may exist between the adversaries. The 1999 RAND study quoted earlier brings out that, "Perceptions are shaped by a variety of factors, including leadership dynamics, regime type and culture, all of which can affect the way the adversary views and calculates the costs and benefits of resistance." Leaders, who are a law unto themselves, are more likely to make mistakes than those who listen to advice.⁴² The case of the Japanese attack on Pearl Harbour is a classic case of a misperception of an adversary's will.⁴³ The effect of technology too can be obscured by operational restrictions and impediments. The message of Op Rolling Thunder (which utilized American air power) that was sought to be conveyed to the North Vietnamese was diluted due to spasmodic action that resulted from bad weather and friction generated due to 'fog of war'.⁴⁴ Coercion may also not succeed because the target of coercion may hold a conviction that, come what may, the coercer would continue to maintain the hostile posture. This happens when the concessions made by the coercer lack credibility or are not considered sufficient; this is a failure of persuasion or inducements offered by the coercer.

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With the intermeshing, literally, of the air, space and cyber domains in modern conflict, new synergistic capabilities would be required to influence

41. Byman et al, n. 7, pp 50-53.

42. Ibid, pp 49-50.

43. Michael Slackman, *Target: Pearl Harbor*, as cited by Adam B Lowther, ed., *Deterrence: Rising Powers, Rogue Regimes and Terrorism in the Twenty First century*, (New York: Palgrave Macmillan, 2012), pp 7-8.

44. Lowther Ibid.

the decision making calculus of the adversary.⁴⁵ The freedom that these domains afford to both, the coercer and the target of coercion, opens a new arena of conflict. Since these three fields are an intricate part of daily human activity worldwide, the capability of coercion that can be exerted (and opposed) through them would be far reaching, requiring multi-disciplinary tools, including air power.

Assessment of Success of Coercion

'How is success of coercion measured' is a question that has perhaps as many answers as there are scholars of the subject. Can it be a simple yes or a no or can there be a partial fulfillment of these states? Adopting a binary route (of a straight forward success or failure) is not supported by real life occurrences and outcomes in conflict. For example, in Israel's war against the Hezbollah in Lebanon in 2006, the Israel Air Force conducted a very successful air campaign but overall, the performance of the Israel Defence Forces was sub-optimal in delivering the final result desired by the political leadership. So, "... the war's less than satisfying outcome in no way reflected failure of the Israel Air Force to perform.....Rather it stemmed from a more overarching deficiency in strategy choice.." said an in-depth study.⁴⁶ The coercive results sought by Israel were not fully achieved though it would be an understatement to say that what was obtained was very substantial.⁴⁷ Another example of the absence of a black and white result can be found in Israel's conflicts with its neighbouring nation states. Prior to the 1967 Arab-Israeli war, Syria would permit the terrorists to strike Israel from bases within its territory but after the resounding defeat in the '67 war, especially due actions of air power, it circumvented the coercive capability of Israel by routing the terrorist strikes through Lebanon. The measurement of success of coercion by the Israeli Air Force in the change of Syrian policy is not possible using a binary metric of success or failure. A comparison

45. William A Chambers Maj Gen, in foreword to Adam B Lowther (ed), *Deterrence: Rising Powers, Rogue Regimes and Terrorism in the Twenty First century*, (New York: Palgrave Macmillan, 2012), p. x11.

46. Benjamin S Lambeth, *Air Operations in Israel's War against Hezbollah*, (Santa Monica CA: RAND Corporation, 2011), p. xx (pp 335-343).

47. Ibid.

between the international position of the United States in 1963, before the expansion of the coercive conflict against Hanoi, and in 1973, at the time of the withdrawal from Vietnam, shows that “failure” does not simply mean returning to the previous status quo -- it could be worse, as in this case.⁴⁸

A ‘spectrum approach,’ where the *degree* to which certain conditions are present or absent before and after commencement of coercion gives a better idea of the success or failure rather than a simple presence and absence.⁴⁹

AIR POWER AND COERCION

Air power has always been available in the arsenal of the politicians but its significance suddenly sky-rocketed after its stupendous showing in the 1991 Gulf War. It needs to be noted that all other conflicts were also conventional engagements and hence an explanation is due why the nuclear environment is not being considered for studying coercion through air power. In the cold war era, the threat to use nuclear weapons was the threatened use of brute force where the annihilation of either side was almost pre-ordained. Since there were only two super powers, it was a zero sum game and deterrence was being exerted due the capability of the weapon and not the means of delivering it, which were many, and were available to both the protagonists. Thus, though air power was a means of delivery, it was by no means the sole one. In the conventional environment, while the weapons certainly have an important bearing in the quality of coercion, it is the unique characteristics of the delivery means of air power instruments that forms an important part of coercion.

Escalation Dominance Tool

The power of punishing gives air power the qualification to attain escalation dominance, which is “The ability to escalate credibly against the

48. Patrick C Bratton, “When is Coercion Successful? And Why can’t we Agree on it?” UN Naval War College Document p. 13, available at <http://webcache.googleusercontent.com/search?q=cache:http://www.usnwc.edu/getattachment/4e9e93e3-50b9-4fe9-b6e8-c7aca4218a9b/When-Is-Coercion-Successful--And-Why-Can-t-We-Agre.aspx> accessed January 27, 2014.

49. For more on this as well as ‘backfiring and hardening’ of adversary resistance that cannot be evaluated by binary assessments see Byman et al., n. 7, pp 23-26. See also Bratton Ibid.

adversary.....(and) allows the coercer to manipulate the level of costs the adversary associates with particular behaviour."⁵⁰ A perfect example of this was obtained in the Bosnian conflict of the 1990s where, "...airpower was used not only to pressure the Serbs into specific action on the ground.... but also to pressurize the Muslims into accepting the emerging partition of Bosnia...and it was the end of the bombing that opened the door to a ceasefire agreement and all party negotiations."⁵¹ In reality, all no-fly zones are nothing but an 'escalation dominance' state where a message of 'don't fly or else...' is conveyed to the adversary, with an unspoken but embedded message of infliction of punishment. This was clearly apparent in Libya where, after the air strikes in Op El Dorado canyon in 1986, there was a sharp decline in Libyan sponsored terror attacks.⁵² This denial strategy was also visible in the attack of Indian Air Force Mirages on the main Pakistani logistics base at Muntho Dhalo during the 1999 Indo-Pak Kargil conflict. The will of the intruders to continue fighting was broken after the strike on 17 June that totally destroyed the base and caused a very large number of casualties.⁵³ Muntho Dhao was revisited by Indian Air Force fighter

50. Byman et al., n. 7, p. 30.

51. Steven L Burg, "Coercive Diplomacy in the Balkans," in Robert J Art and Kenneth N Waltz, eds., *The Use of Force: Military Power and International Politics*, (Oxford: Rowman & Littlefield publishers, Inc., 2004), p. 254. The referred essay is a concise evaluation of the use of military force in two conflicts, successful in Bosnia (1995) but its misapplication later in Kosovo (1999), as per the author (pp 247-269).

52. Walter J Boyne, 'El Dorado Canyon,' *The Air Force Magazine Online Journal*, March 1999, <http://www.airforcemag.com/MagazineArchive/Pages/1999/March%201999/0399canyon.aspx> accessed January 04, 2013. The article says that after the air strikes, '..... the following months would see a dramatic decrease in the number of Libyan-sponsored, anti-American terrorist events. The Red Army Faction, one of the groups that had claimed responsibility for the La Belle disco bombing, reduced its activities. Other Libyan-sponsored groups followed suit.'

53. AY Tipnis Air Chief Marshal, "Operation Safed Sagar," *FORCE magazine*, October 2006, p. 16. For military action to implement a denial strategy, see Byman et al, n-7, p. 38.

aircraft a day later to ensure that it was not resurrected.⁵⁴ A telling comment on the escalation dominance capability of airpower is from Air Marshal Vinod Patney, the then Air Officer Commanding in Chief of Western Air Command, who was in the forefront of Kargil operations, “It is the nature of airpower that escalation is inherent in its use, unless its use is one-sided, as happened this time... . Before May 26, when we went into action, one of our apprehensions ... was the degree of enemy resolve and to what extent we could expect such escalation.⁵⁵

Indirect Coercing Tool

Using the indirect route to deter an adversary by reducing his ability to defend against a third party is another way air power aids in a nation’s coercive effort. The Bosnian imbroglio is an example where the Bosnian Muslims started procrastinating on the suggested bifurcation of Bosnia, as the NATO bombing of the Serbs was helping their cause and the Serbians were feeling the coercive effect. The Muslims were themselves then coerced into coming to the negotiating table by the threat of ‘ending of the bombing,’ which started the peace negotiations.⁵⁶ Another view of the conflict, but with the same analysis, is that the Serbs felt that due the NATO airstrikes on them they could lose territorial advantages to Croatian ground forces which had been gaining ascendancy due help from NATO.⁵⁷

Creating Internal Instability

Creating and helping internal instability is one way of increasing the

54. Benjamin S Lambeth, *Airpower at 18,000’: The Indian Air Force in the Kargil War*, (Washington DC: Carnegie Endowment for International Peace, 2012), available at <http://carnegieendowment.org/files/kargil.pdf> accessed on 04 Jan 2013. p. 21. This RAND monograph further states at page 33 that, “By one informed assessment, hundreds of enemy troops were killed by IAF air action in such attacks...and enemy radio transmissions during the campaign... attested to the effectiveness of those attacks”. Especially during the campaign’s final days, intercepted traffic revealed severe shortages of rations, water, medical supplies and ammunition, as well as an inabilityto evacuate their wounded. Yet another telling testament....when Pakistan’s Foreign Minister Sartaj Aziz. .implored the IAF to “stop its air strikes” as one of three specific requests that he levied on the Indian government.

55. Pushpindar Singh, *Himalayan Eagles: History of the Indian Air Force*, Volume III: World Air Power, as cited by Lambeth, n. 54, p. 33.

56. Burg, n. 51, p.54.

57. Byman et al, n. 7, p. 40.

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coercive effects on an adversary. While sanctions, no-fly zones *et al* have this aim in their execution, using military power can backfire on the coercer by stiffening the morale of the civilian populace. This is especially true of the use of air power, as seen on both sides of the English Channel in WW II and later in Afghanistan, where war lords came together due the air strikes launched by the Soviets. A similar scene is being played out in the AfPak area due air strikes carried out by America's armed drones; while terrorist leaders are being killed in these UAV attacks, the fact remains that the environment of terror that the drone use has created is generating more recruits to the cause of the terrorists.⁵⁸ The asymmetrical availability of technology, especially air power, has caused the technologically disadvantaged to try and coerce the coercer in other domains as riposte to air attacks. In Chechnya, the rebels resorted to bombings in Russia in response to attacks by the Russian Air Force. After the miniscule Chechen 'air force' was destroyed by the Russians, the Chechen leader Dudayev had reportedly signaled the Russian Commander, "I congratulate you and the Russian Air Force on another victory in achieving air superiority over the Chechen Republic -- will see you on the ground".⁵⁹ Thus, coercers using air power as an instrument need to be wary of the pitfalls when not calibrating its destructive usage. This is a strategy that targets of coercion use to their advantage, as was seen in the intransigence of Saddam Hussein during inspections carried out by UNSCOM inspectors for Weapons of Mass Destruction (WMD); the Americans, in no way could have used military power, especially airpower, to counter his political strategy of gaining political mileage and strengthening his domestic base.⁶⁰

58. A large number of reports attest to this fact. For eg see Owen Bowcott, "Drone Attacks in Pakistan are Counterproductive, says Report," 25 Sep 2012, available at <http://www.theguardian.com/world/2012/sep/25/drone-attacks-pakistan-counterproductive-report>; "Do Drone Attacks do more Harm than Good?" The New York Times, <http://www.nytimes.com/roomfordebate/2012/09/25/do-drone-attacks-do-more-harm-than-good> both accessed January 05, 2014.

59. Benjamin S Lambeth, "Russia's Air War in Chechnya," as cited by Byman et al, n. 7, p. 34, 115.

60. Byman et al., n. 7, p. 39.

Domestic Politics and Air Power's Coercive Ability

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Domestic political peculiarities and orders place limitations on the unfettered use of air power, as would be preferred by an airman. An apt example is that of its use by India against the intruders in the Kargil conflict. A fiat from the civilian leadership did not permit the IAF from crossing the Line of Control.⁶¹ That this resulted in critical limitations for the IAF would be an understatement, but in the event, the order was respected to the last detail. Similarly, in the Indian intervention in the Sri Lanka-LTTE conflict, though India deployed nearly all offensive equipment, including attack helicopters and tanks, fighter aircraft were not sent as a policy decision, as this level of commitment of air power would have detrimentally affected perception of the Indian intervention in another nation. However, the air dropping of food articles on 04 June 1987 by An-32 aircraft, escorted by Mirage fighters, was a show of coercive power by India utilizing air power, which was followed by the Sri Lanka accord for the induction of the Indian Peace Keeping Force.⁶² The political costs of deploying air power assets (fighter aircraft) for the protection of An-32s was acceptable to the political executive while it was not considered so for routine operations. A very contemporary example of the coercer being coerced and not being able to use air power was in Syria, where chemical weapons were allegedly used by the Assad regime in 2013. Despite Syria having crossed his publicly declared 'red line,' President Obama could not use coercive air power due domestic political compulsions,⁶³ highlighting the import of domestic limitations on its usage. Similarly, in the UN mandated NATO operations against Col Gaddafi in Libya in 2011, a very

61. Tipnis, n. 53, p. 12.

62. Harkirat Singh Maj Gen, *Intervention in Sri Lanka: The IPKF Experience Retold*, (Delhi: Lordson Publishers Pvt Ltd., 2007), p. 25

63. Peter Grier, "Syria airstrike: Can Obama persuade Congress to share responsibility?" *The Christian Science Monitor*, 04 Sep 2013, <http://www.csmonitor.com/USA/DC-Decoder/2013/0904/Syria-airstrike-Can-Obama-persuade-Congress-to-share-responsibility>, accessed on January 24, 2014.

high standard of weapon delivery, termed as 'accountable warfare' was mandated to avoid collateral damage; on many an occasion, pilots aborted weapon release as they were not sure of this aspect.⁶⁴ So, in contemporary warfare, where casualty sensitivity is high and increasing by the day, the coercive application of air power would be monitored very intimately, thereby placing restrictions on its unfettered use.

Space and its Militarisation

Militarisation of space has been continuing from almost the day man started launching satellites. Most space systems developed by the two super powers were for the purpose of enhancing their nuclear war fighting capability but as the realization of Mutual Assured Destruction sunk-in, "...the stability that MAD imposed on the strategic environment extended into the space domain."⁶⁵ The 1967 Outer Space Treaty banned deployment of weapons of mass destruction in orbit around the earth, but weaponisation continued surreptitiously. The Russians continued to develop dazzlers and other directed energy weapons and the US an ASAT weapon. The demise of the Cold War gave some respite to the militarisation race,⁶⁶ but that was short lived as the Anti-Satellite (ASAT) test carried out by China in 2007 jolted the world to the realities of the weaponisation drive being undertaken by many other nations. The link of air and space being almost inextricable and a large number of critical non-defence sectors getting dependent on space assets has lead to the realization that space assets need to be protected from hostile action. If not done, the resultant technological and military asymmetry that it would afford its exponents would give coercive capabilities difficult to match by those handicapped by its non-availability. Conversely, if a weaker nation is able to deny a stronger nation the use of space capabilities, then the

64. For example see Royal Aeronautical Society Paper, "Lessons Offered from the Libyan Campaign," London: July 2012. Stressing the point that very low levels of collateral damage were mandated, the paper brings out that, "The Storm Shadow missions included one which was aborted minutes before weapon release owing to collateral damage concerns..." p.11. <http://aerosociety.com/Assets/Docs/Publications/SpecialistPapers/LibyaSpecialistPaperFinal.pdf>, accessed January 16, 2014.

65. Forrest E Morgan, *Deterrence and First Strike Stability in Space*, (Santa Monica, CA: RAND Corporation, 2010), p. 10.

66. *Ibid.*, pp., 13-16

chances of a terrestrial war increase due a breakdown in deterrence stability. So, "effective space deterrence fortifies general deterrence and stability."⁶⁷ The coercive capability, thus, of space power adds to general stability by preventing an aggressor from being tempted to assess the opponent as weak and to challenge him through a kinetic engagement.

Air power and ISR

Down history of warfare, a Commander has always wanted to know what's lying 'over the hill' so that he could plan his strategy. If he could get a live view *continuously, for unlimited time and of a quality on which he could plan his operations*, he would be infinitely more informed and prepared. If we discount the early Montgolfiers of the nineteenth century,⁶⁸ Intelligence, Surveillance and Reconnaissance (ISR) capability with a vertical 'God's eye view' became available with the launch of reconnaissance satellites. However, satellites have their own serious limitations that do not lend the quality of 'persistent stare' that has become available with UAVs of all hues and shapes and with varying endurance, range, time on station, loiter altitude and surveillance devices (ranging from simple optical cameras to synthetic aperture radars). With the arming of UAVs, a very potent capability has been introduced, that of minimal time loss between sensing of a target and its engagement by a kinetic weapon. Nowhere has its coercive effect been seen better than in the tribal areas of Pakistan and adjoining Afghanistan, where drone strikes have 'taken out' a large number of terrorist leaders and forced them to change their operational pattern and indeed their daily routine.⁶⁹ The coercive effect of the new capability that removed the safety afforded by night was starkly apparent in United Nations' peace keeping Mission in DR Congo (MONUC/MONUSCO) too.

On arrival of Mi-25 attack helicopters of the Indian Air Force in 2003, the
67. Ibid., p. 21.

68. See n. 12.

69. Hussain Nadim, "How Drones Changed the Game in Pakistan," *The National Interest*, 03 August 2012, <http://nationalinterest.org/how-drones-changed-the-game-pakistan-7290>, accessed 03 Jan 2014. Also see James Igoe Walsh, *The Effectiveness of Drone Strikes in Counterinsurgency and Counterterrorism Campaigns*, (Carlisle PA: US Army War College Press, September 2013), <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1167.pdf> accessed January 03, 2014.

rebels shifted their nefarious activities to night time, but then had to put their 'heads down' when the night capable Mi-35 attack helicopters were deployed in 2005. The withdrawal of these attack helicopters by the Indian Government after six years resulted in an operational situation described as 'grave' in a conference held at UN Head Quarters New York, to discuss the low availability of Rotary Wing assets for peace keeping missions. The paper of the Centre for International Cooperation of New York University presented at the Conference stated that armed groups made forays into villages at night and made a getaway in the morning --- "however the arrival of night capable Mi-35s became a deterrent to these nightly raids...."⁷⁰ and underscored the coercive capability of air power.

However, nowhere is the 'persistent stare' capability of UAVs more evident than in the continuous surveillance of Arab territories by Israel. As Benjamin Lambeth records in his book on the operations of the Israeli Air Force in July-August 2006 during Operation Change of Direction, "For nearly seven straight years thereafter (after withdrawal from Lebanon in the year 2000), it had been conducting *round the clock* (emphasis added) ISR monitoring in support of IDF low intensity warfare against Palestinian terrorists operating out of the West Bank and Gaza Strip."⁷¹ This enabled the sensor to shooter time in cases of engagement of Palestinian rocket launchers to be reduced to single digit figures, sometimes even before the last rocket could be fired by the launcher in its sequence. The UAVs were aided by three satellites that provided electro-optical, infrared and Synthetic Aperture Radar imagery with a reported resolution of less than three feet!⁷² The coercive effect on Palestinian operators of knowing that a counter strike would hit them before they could clear out from the area can well be imagined. A similar situation exists in the ongoing campaign of targeted killings indulged-in by America in its 'war against terror' and by the Israelis against Palestinian fighters. The use of armed UAVs in these

70. Jake Sherman, Centre of International Cooperation, NY University, Discussion Paper "Assessment of Force Generation Challenges Relating to Rotary Wing Assets for UN Peacekeeping Operations," 2011, presented at UN Workshop on Rotary Wing Assets held at UN Headquarters, New York, April 27/28, 20 11.

71. Lambeth, n. 46, pp. 111-112.

72. Lambeth, n. 46, p. 121.

killings, “..reminds terrorists of the long arm of the state’s coercive abilities and of the real power asymmetries that exist. They also reiterate that death and capture is often sudden and unanticipated. Both can help lower a group’s morale.”⁷³ Long term effects like becoming unwelcome in their own communities, other people avoiding them in cafes and actually vacating the area on the arrival of the wanted men and not getting a girl in marriage⁷⁴ add to the coercive aura and effect of the UAV and in turn, air power.

Directed Energy Weapons and Air Power

Nowhere in the future would a more lethal and instantaneous attack combination be found other than in the integration of directed energy weapons and a vehicle which has a persistent stare capability, i.e., a UAV or a satellite. The presence of such a ‘shooter’ on board a ‘sensor’ would drastically reduce the engagement time after detection of a target. The first kill using a laser was obtained during trials in the US in 1973 when the USAF shot down a drone with a laser fired from the ground. The first airborne engagements were through the USAF Airborne Laser Lab (ALL) programme which started in 1976 with the aim of a technology demonstrator in a KC-135 Stratotanker aircraft; the project ran for 11 years in which five AIM-9 missiles and a drone were shot down.⁷⁵ Work is currently ongoing at DARPA to demonstrate a functional airborne laser weapon under the High Energy Liquid Laser Area Defence System (HELLADS) to fit into a tactical aircraft.⁷⁶ A step further would be employment of the weapon in space; though the technical obstacles to be overcome would be enormous, but when the technology matures further to enable such employment, then, the term ‘star wars’ would become a reality. Any target in the footprint of

73. Alex S Wilner, Targeted Killings in Afghanistan: Measuring Coercion and Deterrence in Counterterrorism and Counterinsurgency,” *Studies in Conflict and Terrorism*, (London: Routledge, 2010), p. 315.

74. *Ibid.*, p. 316..

75. Carlo Kopp, High Energy Laser Directed Energy Weapons, ir Power Australia, Updated 2012, available <http://www.ausairpower.net/APA-DEW-HEL-Analysis.html#mozTocId408377>, accessed on January 14, 2014.

76. Graham Norwick and Guy Norris, “DARPA at 50: Blue Sky Thinking: Guided by the Light” *Aviation Week and Space Technology*, August 18/25 issue, 2008, p. 14. Programme director Don Woodbury is quoted as saying that, “...it will be the same kind of revolution in military affair as PGMs.”

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the enabled satellite would become transparent for an engagement, as also other space assets of an adversary.

AIR POWER AS A POLITICAL TOOL

In the final analysis, air power is a tool in the hands of politicians to enforce state craft. Considering its very many positive attributes, it is a handy instrument for sabre rattling and communicating the escalation in the coercive intent through graduated signaling. The air drop of food by the Indian Air Force on 04 June 1987 in the Jaffna peninsula of Sri Lanka was an indication of the political intent of the Indian government that not only would it not let the Tamil community in Sri Lanka suffer but also that it would not let events in Sri Lanka affect the political stability of the Indian Union by the turmoil it would cause in the adjoining Tamil Nadu state.⁷⁷ An additional intent was to coerce the Sri Lankan government to enter into an agreement for a solution of the Tamil problem.⁷⁸ A similar intent was demonstrated in the attack on Libya by America through Op El Dorado Canyon, after which there was a marked decrease in Libyan support to anti-American terrorist activities.⁷⁹ The no-fly zones also are but coercive interventions and a form of kinetic signaling to convey political intent and resolve to inflict punishment if transgressed. But one of the most telling incident representative of the coercive result of air power on a political decision was the strike by Indian Air Force MiG-21s on the Governor's House in Dhaka on 14 Dec 1971 while a meeting convened by the Governor of then East Pakistan was

77. JN Dixit, "IPKF in Sri Lanka," *USI Journal*, CXIX, no. 49, p. 254. The author was the Indian High Commissioner in Sri Lanka and was instrumental in events leading to the induction of the IPKF. He stated, "... the IPKF is several things...it is an external projection of our influence to tell our neighbours that if...you pose a threat to us, we are capable of, or have a political will to project ourselves within your territorial jurisdiction for the limited purpose of bringing you back."

78. Harkirat Singh Maj Gen, *Intervention in Sri Lanka: The IPKF Experience Retold*, (Delhi: Lordson Publishers Pvt Ltd., 2007), p. 25.

79. Walter J Boyne, 'El Dorado Canyon,' *The Air Force Magazine Online Journal*, March 1999, <http://www.airforcemag.com/MagazineArchive/Pages/1999/March%201999/0399canyon.aspx> accessed on January 04, 2013.

underway; the precise delivery of a few 57 mm rockets conveyed the firm resolve of the attacking forces which resulted in the Governor suing for surrender of the Pakistani garrison.⁸⁰

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Air power in COIN

Internal political legitimacy of many a state has been called into question in various forms. Firstly, by home grown insurgencies like the Taliban in Afghanistan, Maoists in India, ETA in Spain, and the Chechen rebels in Russia; secondly, situations exist in some countries where inter-state disagreements result in the conflicts transforming into sub-conventional warfare with the adversarial parties supporting their proxy groups, e.g., the factional parties in Congo which are supported by the countries that border it and in India itself where the Kashmiri separatist groups are supported by Pakistan. Lastly, in yet another variation, groups like al Qaeda, the Red Army *et al* have a pan-international presence, with linkages existing in many countries. Can air power be used in such counter insurgency operations to enforce the writ of the state?

Historical use of air power in COIN operations in the three situations mentioned has seen large variations in the strategy and the tactics applied in each. The variables have been governed by one basic factor, which is, whether the adversaries are one's own people or not? This question can be reframed to ask whether the entity applying the COIN strategy is an indigenous one or an outsider? The supportive (as against coercive) role of air power in the overall national COIN strategy of a state brings greater dividend than its coercive usage. This does not imply that air power cannot be used to deliver kinetic effects, as indeed has happened, but the technological advances offer a multitude of options to support the state in its COIN actions.⁸¹ Though the basics of winning an anti-insurgency campaign remain the same, whether the insurgents are one's own nationals

80. Jasjit Singh, *Defence from the Skies*, (New Delhi: KW Publishers Pvt Ltd, 2013), pp. 167-168.

81. *Basic Doctrine of the Indian Air Force: IAP 2000-12*, (New Delhi: Air Headquarters New Delhi, 2012), p. 110.

or not, the discrimination exercised in usage of the various facets of air power has been found to be different. The strategy of “Winning Hearts and Minds,” which is the corner stone of any anti-insurgency strategy, was not too visible in Algeria, Korea, Vietnam, Iraq, and Afghanistan where the coercer was an outside power. In these anti-insurgencies campaigns, collateral loss of lives of innocent civilians was, and has been, rampant unlike the other variable where the coercer is indigenous to the problem, as in India.⁸² There is no singular magic solution to all types of insurgencies and the Indian state has used a variety of means to address them, some successfully some otherwise.⁸³ It is also true that offensive air power has hardly been used against insurgents in India⁸⁴ but the very reason of its non-usage is the acceptance of the fact by the Indian state that brute force does not succeed in quelling a rebellion of one’s own people.⁸⁵ As a RAND study puts it, in COIN, air power by itself, “is unlikely to be decisive on its own against insurgents, but it has historically proven to be enormously valuable

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82. For the inevitability of collateral damage in COIN operations see Lara M Dadkhah, “Close Air Support and Civilian Air Casualties in Afghanistan,” *Small Wars Journal*, <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=16&cad=rja&ved=0CEQQFjAFOAo&url=http%3A%2F%2Fsmallwarsjournal.com%2Fmag%2Fdocs-temp%2F160-dadkhah.pdf&ei=VobYUq3PDL5yAPVuICABQ&usg=AFQjCNE03Pb8aTWQSDsxBZF4Nux0-ZDwkQ&bvm=bv.59568121,d.bmk>. As an example see Micah Zenko, “Collateral Damage in Afghanistan is Unavoidable, 30 June 2009, <http://www.theguardian.com/commentisfree/cifamerica/2009/jun/24/mcchrysal-usa-afghanistan-air-attacks>, 17 January 17, 2014. In the article, the collateral damage due in one particular air strike in Granai village in Afghanistan is said to have killed between 26 (US CENTCOM figure), 86 (Afghan human rights groups figure) and 140 (Afghan Government claim) locals.
83. Paul Staniland, *Routledge Handbook of Indian Politics* See draft of the article available at <http://home.uchicago.edu/~paul/StanilandHandbookDRAFT.pdf>, accessed January 15, 2014.
84. The only case of armed action against insurgents by the Indian state s against the Mizo insurgents who had surrounded the treasury in the town of Aizawal. Fighter aircraft of the IAF strafed the area around as helicopters ferried in troops to break the uprising. See “Harry’ Ahluwalia Air Vice Marshal, “Helicopter Operations in the Indian Air Force,” available at <http://www.bharat-rakshak.com/SRR/2006/02/53.html>, accessed January 28, 2014.
85. “Air power against Naxals must Avoid Collateral Damage: Naik,” report in *The Hindu*, Allahabad, 12 Apr 2010, Speaking on the use of air power against Naxal insurgents, the Indian Air Force Chief, Air Chief Marshal PV Naik said, :We have the capability to conduct strikes with utmost precision. However, it must be understood that if a 250 kg bomb is dropped at a spot, its impact will be in a radius of at least 800 metres and that may affect many people who may not themselves be insurgents.... If at all a situation arises where the use of Air Force becomes inevitable, there has to be clarity on the magnitude of the force we are supposed to use so that the collateral damage is minimum. After all, we are dealing with our own people in our own territory,” accessed 20 Jan 2014.

to forces that have been fortunate enough to have access to.”⁸⁶

Air power against States

What is the coercive capability of air power against established states? Here, force of any type has the advantage of having an adversary which has claims to tangible assets, unlike in the case of non-state actors. The full weight of all capabilities of national power can be brought to bear in creating the coercive effect. Force not only includes kinetic military action but also has diplomacy, economic and informational elements of national power.⁸⁷ For the two super powers during the cold war, nuclear capability was, inter se, the cornerstone of deterrence. Nuclear war fighting was never an issue in their conflicts with, and in, other countries. Even Israel, which has an existential threat from its neighbours to its right to live as a state, has never factored-in its reported nuclear capability in its strategy against its adversaries.⁸⁸ However, conventional war under a nuclear overhang has been a subject of raging debate and writers have been asking policy makers not to neglect this aspect even as most nations battle sub-conventional threats and engage with non-state actors. That adequate space exists for such conventional confrontation was proved during the Kargil conflict between India and Pakistan where military power (including air) were used to telling effect to force the intruders to withdraw and for Pakistan, the state sponsor behind the incursions, to be coerced into stopping aid to them.⁸⁹ An added factor was the aspect of escalation control that was clearly visible due the Indian Air Force not crossing the line of control, as per directions of the political leadership. While this imposed operational and tactical restrictions for the IAF, the fact is that compellence was made easy due the political high ground occupied by India and the aggression literally coerced-out through both punishment and denial; the punishment was through ground and air

86. Alan Vick, Adam Grissom, William Rosenau, Beth Grill, Karl P Mueller, *Air Power in the New Counter Insurgency Era*, (Santa Monica, CA: RAND, 2006), p. 150.

873 Wolf, n. 2, p. 6.

88. Avner Cohen and Benjamin Franknel, “Opaque Nuclear Proliferation” in Benjamin Franknel (ed.), *Opaque Nuclear Proliferation: Methodological and Policy Implications*, (Portland: Frank Cass, 1991), p25 quoted in Nuclear section of Nuclear Threat Initiative available at www.nti.org/country-profiles/israel/nuclear/, accessed Decemer 07, 2012.

893 Lambeth, n. 54, p. 1-2.

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action while denial was the through occupation of the political high ground by maintaining the sanctity of the line of control that precluded Pakistan from using its air force and army assets overtly.

Does military coercive capability work against all types of states, including those governed by dictatorial and autocratic regimes, euphemistically now called 'rogue' regimes? The major change in contemporary world politics, and into the foreseeable future, is the trend towards coercion in situations of asymmetry.⁹⁰ It finally has to be tailored to each individual case consequent to a detailed understanding of the opponent.⁹¹ With terrorism becoming an independent threat as well as a weapon in the hands of rogue states, coercing it such that it loses its importance is essential. While ensuring it through a strategy of punishment is straight forward (whether it will succeed or not is a different question), the use of a strategy of denial is favoured by some analysts. In an incisive commentary titled 'Terrorism and Deterrence by Denial,' Smith and Talbot talk of making the terrorist threat irrelevant by addressing it at the tactical, operational and strategic level.⁹² While the thrust of their essay is on policies and actions to be taken by the political leadership, they say that air power can contribute in a big way through its ISR and strike capability in the tactical and operational ambit. Tactically, the authors talk in terms of shielding the population by "delinking terrorism from its victim." and preventing the terrorists from access to populace while at the operational level they recommend through 'removing access

90. Jeffrey W. Knopf, "The fourth Wave in Deterrence Research," *Contemporary Security Policy*, Vol. 31, No 1, April 2010, p. 3. The author writes that, not only does the US want to ensure deterrence of rogue states but also wants to prevent them from being able to get in a position to deter the US – this has led to the Americans adopting a policy of pre-emption, as being seen in the drive to prevent Iran from going nuclear and the international sanctions being applied on North Korea to prevent it becoming a threat to the US and its allies.

91. *Ibid.*, p. 9. The Bush administration officially labeled it 'tailored deterrence.'

92. James M Smith and Brent J Talbot, "Terrorism and Deterrence by Denial," cited in Paul R Viotti, Michael A Opheim and Nicholas Bowen (eds.), *Terrorism and Homeland Security: Thinking Strategically about Policy*, (Boca Raton, FL: CRC Press, 2008), pp. 53-68.

to sanctuaries...and keeping terrorist leadership underground and on the run.⁹³ Air power is a major cog in these actions through persistent surveillance by means of UAVs, as is being done by Israel (in Gaza and other territories) and the US (in AfPak region) and by regular kinetic air strikes against adversary leadership by both countries. In the long run, these effects synergise to have a strategic effect in the overall picture.

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CONCLUSION

Deterrence and compellence constitute coercion. Power politics influences the coercive capabilities of nations as they try to establish a pecking order in the constant struggle to be ahead of competitors and peers. Before the advent of air power, land and maritime power of a nation determined the coercive strength of a nation. Air power brought along with it certain attributes that redefined the coercion that was, and is, exercised by military power. Air power's range, speed, flexibility and the potential to inflict punishment has brought a new paradigm of coercive capability in the hands of the politician. The advancement of ISR competence due galloping innovations in optics and optronics coupled with air launched precision weapons resulted in an exponential jump in the destructive potential of air power. The technological asymmetry that these advances brought along resulted in the generation of an adversary who, though extremely well motivated, lacked the tangible wherewithal to match the modern opposing knowhow and equipment. This technologically challenged adversary's answer has been to use the sub-conventional means of irregular warfare and resort to terrorism to further his aims. As a result of its great success in the 1991 Gulf War, air power has become the preferred tool to meet the challenge. Not every time has air power been successful, as history shows that threatening ideology and a 'movement' by brute force has not always been successful.

While air power's record in coercion in inter-state wars has been positive,

93. Ibid.

it has not always got due credit for its efforts. This is because, in the overall picture, the final coercive aims may not have been met in the endeavours put in by a nation. Air power is but one tool in the bouquet of actions that are brought into play against an adversary. While die-hard proponents sing paeans in its favour there are critics who do not see the big picture but just concentrate on the results, taking a binary view. Both tracks are far from the ideal and if one understands and accepts that, in the final analysis, military power is just an adjunct to political authority, one's analysis cannot go wrong. Air power has coercive capabilities that are available to be tapped by a judicious leadership.