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THE STRING OF PEARLS: CHINESE MARITIME PRESENCE IN THE INDIAN OCEAN AND ITS EFFECT ON INDIAN NAVAL DOCTRINE

by

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The String of Pearls is a term that has permeated Indian naval policy circles in recent years. This term encapsulates the idea that, since the early 1990s, China has been developing a network of naval bases in south Asian littoral nations as a means to project maritime power into the Indian Ocean and beyond to the Middle East. Contrary to Indian perceptions, Chinese activity in the littoral nations has, to this point, been primarily economic, not military in nature. Nonetheless, this activity has prompted a change in Indian naval doctrine to support the employment of a blue water navy. This change in Indian naval doctrine can be explained utilizing Prospect Theory. Prospect Theory describes the effects of a psychophysical tendency that prompts people to become risk acceptant in the face of losses. This study will show how the Indian National Security Elite, when faced with the perceived loss of power and influence to China in south Asian waters, endorsed blue water naval doctrine as a means to reestablish the status quo of relative naval superiority in the northern Indian Ocean.

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The String of Pearls is a term that has permeated Indian naval policy circles in recent years. This term encapsulates the idea that, since the early 1990s, China has been developing a network of naval bases in south Asian littoral nations as a means to project maritime power into the Indian Ocean and beyond to the Middle East. Contrary to Indian perceptions, Chinese activity in the littoral nations has, to this point, been primarily economic, not military in nature. Nonetheless, this activity has prompted a change in Indian naval doctrine to support the employment of a blue water navy. This change in Indian naval doctrine can be explained utilizing Prospect Theory. Prospect Theory describes the effects of a psychophysical tendency that prompts people to become risk acceptant in the face of losses. This study will show how the Indian National Security Elite, when faced with the perceived loss of power and influence to China in south Asian waters, endorsed blue water naval doctrine as a means to reestablish the status quo of relative naval superiority in the northern Indian Ocean.

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LIST OF ACRONYMS AND ABBREVIATIONS

GDP	Gross Domestic Product
INSE	Indian National Security Elite
NIOA	Northern Indian Ocean Area
PLA	People's Liberation Army
PLA(N)	People's Liberation Army (Navy)
PLA(AF)	People's Liberation Army (Air Force)
SLOC	Sea Line of Communications
U.S.	United States
U.S.A	United States of America

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To my wife, Daniella, and my children, David, Maya, Gabrielle and Genevieve.

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I. INTRODUCTION

In 1405, Admiral Zheng He departed the Chinese coast at the head of a 62 ship armada on his way to overawe the coastal nations Asia with the might of the Ming Empire.[1] The journey was designed to not only corral more nations into the tributary embrace of the Chinese Emperor but also to conduct trade. The armada was made up of approximately 28,000 men and a wide array of wooden ships, some of which were the largest in the known world.[2] The audacious display of Chinese maritime power was followed by centuries of isolation when the Emperor decided in 1433 to relinquish Asian maritime dominance in order to focus on maintenance of the status quo on the continent.[3] It would not be until 1985 when Chinese vessels once again cut through the Indian Ocean. The impact of Zheng He's voyage is still being felt within the Indian security establishment. This idea that Chinese naval power will again plow through Asian waters on its way to subjugating south Asian littoral nations is a meme that resonates within Indian security circles.[4] The most recent manifestation of Indian concern about growing Chinese naval capability is fixation on the idea that China is building a series of naval bases in south Asia. This narrative reads that since the early 1990s, the Chinese have been seeking to persuade Myanmar, Bangladesh, Sri Lanka, the Maldives and Pakistan to grant the rights to use existing ports for military purposes or to allow it to construct naval bases in order to project power into the Middle East and Africa and to secure Chinese strategic lines of communication. This plan has become popularly known as China's "String of Pearls" strategy (Figure 1).

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[1] Emrys Chew, "Crouching Tiger, Hidden Dragon: The Indian Ocean and the Maritime Balance of Power in Historical Perspective" (Singapore: S. Rajaratnam School of International Studies, 2007), 4–5.

[2] Christopher J. Pehrson, "String of Pearls: Meeting the Challenge of China's Rising Power Across the Asian Littoral" (Sydney: Strategic Studies Institute, 2006), 1–2.

[3] Chew, "Crouching Tiger, Hidden Dragon: The Indian Ocean and the Maritime Balance of Power in Historical Perspective," 5.

[4] Anticipation of China's eventual reemergence as a naval power has been detectable in writings by Indian naval strategists and policymakers since the 1970s. After China's first naval foray into the Indian Ocean in over 400 years in 1985, speculation of Chinese intent in the Indian Ocean has been an integral part of Indian maritime security calculations.

Figure 1. String of Pearls[5]

The term String of Pearls was first used in a report prepared by the Booz Hamilton consulting firm for the Defense Department titled *Energy Futures in Asia*. The phrase encapsulated an idea that was held the Indian National Security Elite (INSE) for almost a decade prior to the publication of the *Energy Futures* report. It is the notion that Chinese influence in the Indian Ocean in the form of naval activity to include operations, port calls and basing is eroding Indian influence in the region. This Chinese presence has sparked a major change to Indian naval strategy. Coinciding with this increased Chinese presence the Indian Ocean is was a shift in Indian naval doctrine from one that focused on maintaining regional naval superiority (green water) to one that envisions the Indian navy having the capability to operate globally and plug into international coalitions (blue water).

On the surface, there does not appear to be anything strange about a nation updating its naval doctrine in response to a maritime challenge posed by another naval power. A change in the strategic environment would prompt policymakers to reconsider current approaches. A change in military doctrine is a pivotal step because, among other things, military doctrine informs budgetary, personnel and procurement decisions. In the case of a navy, doctrine can drive what types of ships, weapons systems and aircraft are

[5]Map graphics derived from: "Geography Maps," About.com, http://geography.about.com/.

purchased, how personnel are trained and where forces are based. Most importantly, doctrine is a major factor in the operational effectiveness of a military force. Doctrine determines how a force will be employed and what kind of effects it expects to achieve in the field or on the sea. Given the powerful impact that doctrine has on a military force, a change in doctrine is a significant step that is not taken lightly by a nation's security establishment. Studies have shown that military organizations resist changing doctrine under many circumstances. Given the importance of military doctrine, what was it about increasing Chinese presence in the Indian Ocean that caused the Indians to abandon a proven naval doctrine that secured their national interests for more than four decades?

In this case, the change in naval strategy is best described using Prospect Theory; Prospect Theory describes a psychophysical[6] propensity that people hold that creates incentives to take risks in response to losses. It was the idea that the India was losing influence to China in its near abroad that allowed for a sea change in thinking and for a naval doctrine to emerge that was not feasible in a previous era.

A. INDIAN NAVAL DOCTRINE

Before we proceed, an aside must be taken to clarify terminology. According to the U.S. Department of Defense's Dictionary of Military and Associated Terms doctrine is defined as:" Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives."[7] The term 'blue water navy' refers to force which can operate on the open seas on a sustained basis and has the logistics capability required to conduct replenishment operations at sea. Blue water navies have the capability to project power onto land and to conduct surface, air and subsurface operations around the world. The aircraft carrier battle group is most often associated with blue water navies, however other platforms such as amphibious ships, helicopter carriers, guided missile destroyers, nuclear submarines, supply ships and refuelers are also essential to rounding out the modern blue water capability set. Blue water navies can

[6] The term psychophysical refers to the link between physical stimulus and psychological changes. Rose McDermott, *Risk Taking in International Politics Propect Theory in American Foreign Policy* (Ann Arbor: University of Michigan Press, 1998), 18.

[7] "DoD Dictionary of Military Terms," http://www.dtic.mil/doctrine/dod_dictionary/.

deliver a significant amount of combat power onto land in the form of ordnance delivered by carrier launched aircraft or through the landing of amphibious forces on foreign shores. At the other end of the spectrum, a brown water navy is primarily a riverine force capable of patrolling and defending navigable inland waters and estuaries. The historical use of the term brown water navy was also used to describe a force that defends coastal waters, harbors and ports.[8] A green water navy operates in waters in between those that of a blue and brown water navy. A green water navy can operate close to shore at 200 nm or less however it can also reach further for a limited duration.[9] Logistics is one of the main limiting factors to green water naval operations; since green water navies have a limited capability to conduct replenishment while underway they are tethered to home ports. Green water navies may possess limited power projection capabilities usually in the form of missiles, special operations forces and aircraft. Green water navy mission sets may include securing SLOCs within a few hundred kilometers of the coast or performing various functions in regional waters. Green water navies can dispatch single or a handful of ships to conduct operations on a limited basis far afield, usually in conjunction with coalition partners.

From independence in 1949 to 1998 the Indian navy operated primarily as a green water navy. After a short period of brown water operation in the 1950s the Indian navy quickly transitioned into a green water role. This transition occurred relatively quickly and by the late 1960s the Indian navy had the capability to establish regional maritime superiority over its primary rival, Pakistan. As I will show in a subsequent chapter, Indian naval policymakers never had the desire to limit the navy to a brown water role; from the beginning the Indian navy envisioned a larger role and settled into a green navy maritime doctrine. The primary purpose of India's green water navy was to secure an area of the Indian Ocean that has historically been vital politically and economically.

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[8] Current U.S. Navy publications limits use of the term 'brown water navy 'to only describe forces that operate on inland waters such as rivers and estuaries. "Naval Operations Concept 2010 Implementing The Maritime Strategy" (Washington, DC: Department of Defense, 2010).

[9] Green water navies can conduct goodwill operations further afield, sending ships on port calls at ports outside the region, however they have a limited ability to conduct sustained, multi-ship operations far (greater than 1000 nm) from home port.

B. INDIA'S SPHERE OF INFLUENCE WITHIN THE INDIAN OCEAN

Despite Indian rhetoric regarding the importance of the entire Indian Ocean region, historically and economically, Indian concern primarily revolves around the status of the Arabian Sea, the Bay of Bengal, the Andaman Sea and the part of the northern Indian Ocean that is approximately 500 km south of India that encompass major east-west Sea Lines of Communication (SLOC). For future reference, this region will be referred to as the Northern Indian Ocean Area (NIOA) (Figure 2).

Figure 2. North Indian Ocean Area[10]

Extra regional power presence in NOIA is disconcerting to the Indians for a variety of reasons. The waters of the Arabian Sea and the Bay of Bengal house both Indian territory and key economic resources. There are 723 islands off of the east coast of India, including the strategic Andaman and Nicobar chain.[11] An additional 474 islands lie off of the west coast, including the Lakshadweep chain in the southwest.[12] In addition

[10] "Geography Maps," About.com, http://geography.about.com/.

[11] *Indian Maritime Doctrine* (New Delhi: Integrated Headquarters, Ministry of Defence, 2009), 62.

[12] Ibid.

to islands, India's Exclusive Economic Zone extends for 200 kilometers from its coasts (Figure 3). Oil deposits and fisheries lie underneath the waters of India's EEZ. Indian fisheries produce 3.93 million tons of fish annually.[13] India's major oil deposits sit underneath waters off of the coast near Mumbai. India has more than 5.7 billion barrels of proven oil reserves, most of which reside offshore in the Indian EEZ.[14]

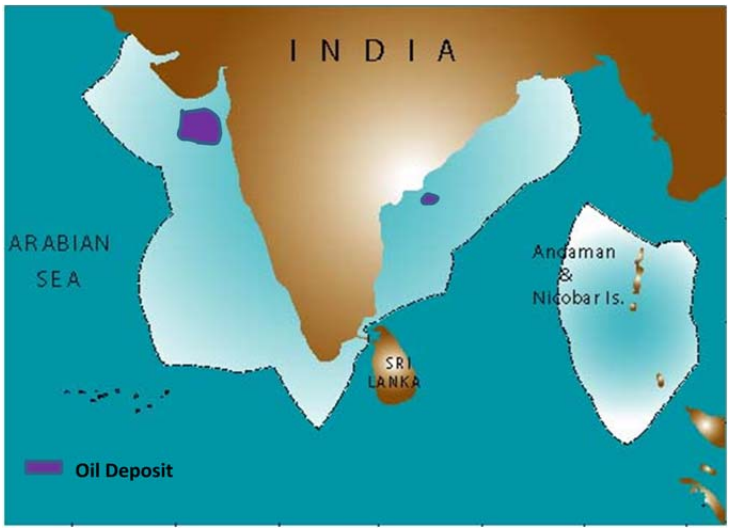

Figure 3. Indian Exclusive Economic Zone[15]

The SLOCs that phase through the NIOA are extremely important to India (Figure 4). The volume of shipping that passes through the NOIA is massive and has increased dramatically since 1970. More than 100,000 ships pass through the NOIA Malacca annually (Figure 5).[16] Shipping lanes in the NOIA feed the 12 major Indian ports and trading along the Indian coast is facilitated by more than 187 minor ports.[17] The Indian economy has historically relied heavily on imports and this situation is greater today due

[13] Ministry of Statistics and Programme Implementation, "Manual on Fishery Statistics," (New Delhi: Central Statistics Office, Government of India, 2011), 2.

[14] Energy Information Association, "Country Analysis Briefs India," (Washington, DC: Department of Energy, 2011), 2–4.

[15] "Indian Exclusive Economic Zone," National Institute of Oceanography Bioinformatics Center, http://niobioinformatics.in/

[16] *Indian Maritime Doctrine*, 57.

[17] Ibid., 63.

to rapid economic growth. From 1986 to 2006 the Indian trade balance skyrocketed 2900%.[18] India imports 75% of its oil and 16% of the gas it consumes.[19]

Figure 4. Indian Ocean Sea Lines of Communication[20]

Figure 5. Sea Lines of Communications through Strait of Malacca[21]

[18] Anne O. Krueger, "The Role of Trade and International Economic Policy in Indian Trade Performance," *Asian Economic Policy Review* 3 (2008): 273.

[19] Arvind Maharajan, "Overseas Acquisitions of Energy Assets by India," (Institute of Management, Chennai, 2010), 2.

[20] "Indian Ocean Shipping Lanes," Science Photo Library, http://www.sciencephoto.com/.

[21] "Indian Ocean Shipping Lanes," Shiplink, http://www.shiplink.lk/.

The littoral nations of the NIOA have historic, cultural and security relationships with India. With the exception of Thailand, all of the NIOA littoral nations were once part of the British Raj. India, Pakistan, Bangladesh and Burma were all governed by the British as a unified territory. Pakistan is India's main regional rival. Myanmar has worried Indians due to its close relationship with China. It will be shown in subsequent chapters that the uncontested control of the NIOA by the British Empire shaped how Indian policymakers viewed India's responsibilities in the area. The southern and western Indian Ocean has not historically factored into Indian strategic calculations. While the Antarctic has important scientific value and the Indians have maintained a research station there since 1982, this area and the thousands of miles of ocean north of it are not critical areas of Indian influence.[22] Similarly, the western Indian Ocean is also not vitally important to the Indians even though they have made inroads over the past two decade with several nations that lie on the western littorals. The NIOA is India's strategic backyard and makes up a large part of its sphere of influence.

C. IMPLICATIONS OF CHINESE PRESENCE IN THE NIOA

Chinese presence in the NOIA was almost universally viewed as a loss by the INSE. As Chinese influence increased in the region throughout the 1990s, beginning with support for Myanmar and Pakistan, the naval strategy and doctrine that served India's interests since independence in 1948 was viewed as increasingly inadequate. The navy that secured the waters of the NIOA for more than four decades was put into question. Could the status quo strategy prevent further Chinese naval presence in the NOIA? Thomas Barrett noted that during the late 1990s and early 2000s debate within Indian naval circles coalesced around four strategic paths that the navy could pursue in the 21st century.

The first option for 21st century naval strategy envisioned a navy that was focused strictly on coastal defense and deterrence. The second option was a sea denial strategy similar to what the former Soviet Union employed. The third option called for a

[22] Vice Admiral G.M. Hiranandani, *Transition to Eminence The Indian Navy 1976–1990* (New Delhi: Lancer 2005). 228–29.

navy that was superior to any navy in the NIOA littoral and was capable of maintaining regional stability. This was considered to be the status quo option. The final option put forth a vision for a blue water navy that was capable of operating as a part of a larger coalition.

Barrett dubbed the blue water navy strategic option as the 'most ambitious' and what makes it so is the myriad risks involved in its implementation. In what follows, it will be shown that the INSE has supported a blue water naval strategy over the other strategies and that Prospect Theory provides the best explanation as to why this is the case.

D. THEORIES TO EXPLAIN THE CHANGE IN INDIAN NAVAL DOCTRINE

1. Prospect Theory

Prospect Theory is a model to explain choices made under conditions of risk. Prospect theory emerged as an alternative to the expected utility theory of rational choice. Expected utility theory underpins the bulk of theoretical work in economics, international relations, political science and a number of other fields. Under expected utility, each choice presented to a decision maker would be the product of its value and the probability of attaining the item evaluated. Comparison between multiple alternatives is done on an absolute basis and whichever option has the highest expected utility would be the one chosen. There have been numerous applications of expected utility reasoning ranging from cost-benefit analysis to nuclear deterrence theory. A critical difference between choices made using expected utility reasoning to those predicted by prospect theory is that there is no frame of reference under expected utility; options are only better or worse than other options not better or worse as compared to a previous state. Prospect theory posits that choices are evaluated from a reference point and coded as losses or gains in addition to being weighted probability of attainment. Prospect Theory predicts that actors will be more likely to accept risk to restore a lost position. In the case of the String of Pearls, the INSE considered increasing Chinese presence in the NIOA as a loss and, as a result, were willing to adopt a blue water naval doctrine as the riskiest alternative to

restore the status quo position in the waters of south Asia. I will present a detailed analysis applying Prospect Theory in Chapter V.

2. Bureaucratic and Domestic Politics

Chinese engagement in South Asia can be utilized as an alarm bell rung by members of influential bureaucracies to wring more resources from an Indian government that is balancing competing priorities. These resources can then be utilized as levers against South Asian states to maintain Indian dominance and to enhance the prestige and autonomy of the bureaucracies that yield them.[23] Bureaucratic politics explanations for recent Indian strategy in South Asia are unsatisfactory for several reasons.

First, the Indian military has been purposely marginalized in the policy formation process by civilian officials since independence. In the years immediately following independence fear of the influence of a powerful military establishment caused early political leaders to weaken the military by decentralizing the command structure and establishing decision making processes that did not include military input.[24] The military lacks influence in New Delhi in general and the navy in particular losses out to the army in the imagination of Indian policymakers. Many commentators recognize that when the military is heard, input from the Indian army dominates the formation of security policy.[25] Barnett described the Indian navy as "powerless" compared to army and air force influence within the Ministry of Defense.[26] Spending on the Indian navy has increased since 1998 in addition to its share of the military budget, however this increase was part of a larger trend of increased military spending.[27] The navy has been able to

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[23] Graham T. Allison and H. Halperin Morton, "Bureaucratic Politics: A Paradigm and Some Policy Implications," *World Politics*, no. 24 (1972); H. Halperin Morton, "The Decision to Deploy the ABM: Bureaucratic and Domestic Politics in the Johnson Administration," *World Politics* 25, no. 1 (1972); Daniel W. Drezner, "Ideas, Bureaucratic Politics, and the Crafting of Foreign Policy," *American Journal of Political Science* 44, no. 4 (2000).

[24] Stephen Cohen, *The Indian Army* (Oxford: Oxford University Press, 1990). 173–76.

[25] Stephen Cohen and Sunil Dasgupta, *Arming Without Aiming India's Military Modernization* (Washington, DC: Brookings Institution Press, 2010). 150.

[26] Thomas Barnett, "India's 12 Steps to a World Class Navy," *Proceedings* 127, no. 7 (2001).

[27] Dasgupta, *Arming Without Aiming India's Military Modernization*, 16–23.

carve out a piece of the budgetary largesse that has been thrown the military's way during the 21st century. The argument that the navy has changed its strategy in order to lobby for more resources is not correlated with changes in the navy's share of the budget. The navy began to garner a larger share of the budget in beginning in 1999, peaking at 18.95% by 2007.[28] The codification of the naval strategy did not occur until 2004 with the publication of the Indian Maritime Doctrine. The navy's budget share has never exceeded 20%. The navy has not been able to use the change in naval strategy as a catalyst to influence political parties to specifically advocate for increase maritime power. No Indian political party has made naval spending a central campaign issue in the way that Ronald Reagan promised to build a "400 ship navy" for the U.S. in the early 1980s.

There has not been a great deal of clamor on behalf of the Indian navy from the private sector. Given the fact that a significant portion of the Indian defense industry is state owned, there is not a powerful private sector lobby that seeks to increase the navy's budget share.[29]

The other aspect of the bureaucratic politics line of reasoning is the idea that the Indian navy used strategy development as a lever to increase its autonomy vis a vis the other services. The Indian military services are parochial; there has been a concerted effort to increase the joint operating capability of the military over the past decade.[30] Each service has developed their strategy and doctrine with very little feedback from or consideration of the other services. The Indian Air Force published their Air Power Doctrine in 1995 followed by the Indian Maritime Doctrine and Indian Army Doctrine in 2004, however there is no overarching Indian military strategy document. Each service develops policy, strategy and doctrine in a vacuum. To say that the change in strategy expressed in the Indian Maritime Doctrine is a bid for increased autonomy flies in the

[28] Ibid., 16.

[29] Ibid., 91.

[30] Ibid., 150–54.

face of the fact that since independence, each Indian military service has always exhibited a great deal of autonomy.[31] This autonomy extends to procurement, facilities management and other support functions.

3. Response to Threat

The neorealist international relations paradigm houses theories that posit that India is pursuing rational strategies to prevent a balancing coalition involving China and the other small South Asian states from forming in its neighborhood.[32] In this context, actions taken by India to counter the rise of Chinese power or the threat of the Chinese military operating in the Indian Ocean region can be viewed through the lens of Sino-Indian security competition. These predictions are problematic because, at the end of the day, Chinese engagement in South Asia for the most part has not been military in nature; no mutual defense treaties between China and other small south Asian states have been signed nor has a Chinese centered military alliance been formed. Unlike Europe during the Cold War, India is not faced with a hostile alliance in its near abroad. I will show in a subsequent chapter that there is no actual naval threat posed by Chinese presence in the NIOA.

E. STUDY LIMITATIONS AND METHODOLOGY

Most studies that have used Prospect Theory to explain policy outcomes have focused on individual decision makers. The historical record has been used to prove that a national leader's thought process and ultimate decision in response to a crisis is better explained by Prospect Theory than by expected utility rational choice. This study applies Prospect Theory to the strategic decisions made by a group. The key to Prospect Theory's applicability in this case is to adequately establish that all members of the INSE have the same reference point regarding India's strategic position in the NOIA. As Mcdermott points out, once a reference point is established for an individual, his choice behavior will be predictable. If a crisis or series of events places an individual in the domain of losses,

[31] This autonomy extends to military matters only.

[32] Kenneth N. Waltz, *Theory of International Politics* (New York: McGraw-Hill, 1979); Stephen Walt, *The Origins of Alliances* (Ithaca and London: Cornell University Press, 1987).

he will be risk acceptant when presented with options to improve his lot. Correspondingly, if the INSE are operating from the same historic reference point regarding India's role in the INSE, they should all view Chinese presence in the NOIA as a loss in strategic position. Indian naval strategists operating in the domain of losses will propose a risky strategy, government officials operating in the domain of losses are will to support risky strategy and private sector actors operating in the domain of losses would be willing to promote a risky strategy even if the expected utility of the strategy is lower than other available options.

This study is not arguing that the INSE sought to arrive at consensus on the implication of Chinese presence in the NOIA and the appropriate response. Instead of groupthink, the shared reference point of the propriety of Indian dominance of south Asia in general and in the waters of the NOIA in particular is what has created a shared narrative among disparate groups in the Indian security establishment. The proliferation of the narrative of the erosion of Indian influence and Chinese dominance of the NIOA, preceded by Chinese naval bases in the littorals is what allowed for the blue water Indian naval doctrine (the riskiest option) to emerge.

Unlike many studies that apply Prospect Theory,[33] this study does not present evidence of a meeting or series of meetings where policymakers are sequestered in a room evaluating each strategic option and arriving at a decision. Unfortunately, documentation of such deliberations is not readily available. Instead, I present evidence from government documents, media accounts, articles and other writings that a doctrinal choice was made and is currently being implemented.

[33] McDermott has four case studies in her book and the other writings that examine a single case rely heavily on biographical testimony and focus on the decision-making of one key leader, often, the President of the United States. McDermott, *Risk Taking in International Politics Propect Theory in American Foreign Policy*., Barbara Farnham, "Roosevelt and the Munich Crisis: Insights from Prospect Theory," *Political Psychology* 13, no. 2 (1992)., Mark L. Haas, "Prospect Theory and the Cuban Missile Crisis," *International Studies Quarterly* 45, no. 2 (2001)., J. S. Levy, "Applications of Prospect Theory to Political Science," *Synthese* 135, no. 2 (2003).

F. DEFINITIONS

The INSE is a subset of government officials and analysts from influential think tanks that work in the area of security. In this study, the INSE will be limited to the Prime Minister, Chief of Staffs of the Army, Navy, Air force, the Minister of Defense, the Minister of External Affairs, the National Security Advisor and analysts from the Center for Policy Research and the Institute for Defense Analysis.

G. THESIS OUTLINE

This thesis is organized as follows. Chapter II is an overview of the Indian navy from 1948–1990. This chapter outlines the green water doctrine of the Indian navy and how it enabled India to maintain the strongest navy in the NIOA. Chapter III explains the salient features of current Indian naval doctrine in order to show that a blue water doctrine has been endorsed by the INSE. .Chapter IV explores the nature of Chinese presence in the NIOA. Additionally, the idea that these activities make up a military threat will be tested in this chapter. In Chapter V, I present an analysis of the problem utilizing Prospect Theory. Finally, concluding remarks are presented in Chapter VI.

II. INDIAN NAVY 1948–2000

The Indian navy pursued a consistent strategy for 50 years after Indian independence. While some of its officers may have desired a larger role for the navy, resource constraints coupled with the geopolitical realities of India's threats emanating from the northern part of the subcontinent shaped a modest, defensive role for the navy. In what follows, it will be shown that policy statements, operational history and procurement patterns all support a naval strategy that was primarily defensive but focused also on buttressing India's role as the main regional power in south Asia through relative naval superiority.

A. INDIAN NAVAL STRATEGY 1948–2000

The newly independent Republic of India had to forge an appropriate military strategy to protect its interests in concert with economic growth and development. The primary threat that emerged immediately following independence was from neighboring Pakistan. With India inheriting the bulk of military infrastructure from the defunct British Raj it possessed a significant military advantage over Pakistan. The threat from the newly emergent People's Republic of China was not readily apparent in the 1940s or 50s. After China's annexation of Tibet in 1950, India shared a 3400 kilometer[34] contested border. The Chinese communist regime did not recognize the treaties that demarcated the border setting the stage for a slow escalation of tension with India through the 1950s that culminated with the 1962 Sino-Indian War. India's humiliating defeat in this conflict crystallized the threat that the Chinese could pose to its northern heartland. The Chinese-Pakistan axis that emerged in the early 1960s further focused the eyes of Indian military strategists and policymakers on continental defense. The Chinese Navy was not a player in the Indian Ocean until mid-1980s.

The British navy was the premier force in the Indian Ocean for more than a decade after Indian independence. After Britain declared that it would focus its naval operations west of the Suez Canal in 1968, America assumed the mantle of ensuring

[34] "Annual Report 2007–08" (Institute for Conflict Management, 2008), 28.

security of major Eastern shipping lanes including those running through the Indian Ocean.[35] The Indian Ocean was a peripheral theater of competition during the early decades of the Cold War. Both superpowers focused their energy on controlling the waters of the Atlantic, Pacific, Mediterranean and Arctic.[36]

The naval strategy formulated by Indian policymakers in the years immediately following independence would be followed by in large until the 21s century. The primary sources of the strategy were the 10 Year Naval Development Plan produced by Commander N. Krishan at the Plans Directorate in Navy Headquarters and a report on defense production written by Professor P.M.S. Blackett.[37] The overarching theme of both documents was the call for the Indian navy to be designed for defense rather than power projection.

Professor Blackett's report was commissioned by 1948 by Prime Minister Nehru and served as an instrument for the civilian bureaucracy to influence military strategy. The Blackett report framed future maritime strategy within the context of economic development and recommended a limited role for the Indian navy. Blackett recommended the following objectives for the Indian navy:

- Protection of coastal shipping against mining, submarines, surface and air attack, with the capability to respond in kind.
- Escorting and protecting a small number of ocean convoys between Aden and Singapore but no further (merchant shipping was important for the development of trade and a valuable national asset).
- Co-operation with the Army and the Air Force in repelling landing operations and advances along coastlines, and to be able to undertake similar operations against the enemy.

[35] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 8.

[36] Rahul Roy-Chaudhury, *Sea Power & Indian Security* (London: Brassey's, 1995). 36., Ashley J. Tellis, "The Naval Balance in the Indian Subcontinent," *Asian Survey* 25, no. 12 (1985): 1190.

[37] Vice Admiral N. Krishnan, *A Sailor's Story* (New Delhi: Punya Publishing, 2011). 177–79; G. M. Hiranandani, "Indian Navy 1945–1976," http://indiannavy.nic.in/print/book/export/html/950, . Professor Blackett was a British scientist who was a leading light in physics and operational research.

The objectives of the navy stipulated in the 10-year plan (1947) were as follows:

- To safeguard Indian shipping.
- To ensure that supplies could reach and leave by sea in all circumstances.
- To prevent an enemy landing on India's shores
- To support the Army in sea borne operations.

Decades later, several wars with Pakistan did not change the security establishment's view of the role of the Indian navy. Admiral S. N. Kohli, former Chief of Staff of the Indian Navy outlined the objectives of the Indian navy in 1978:

- Protecting the Indian coastline and island territories from attack
- Protecting offshore interests
- Protecting Indian sea lines of communication

Similarly, the objectives outlined in the Navy 30 Year Perspective Plan of 1982 were:

- Inflict decisive punishment on any regional Navy in war and to raise the threshold against intervention by foreign powers.
- Ensure the safe movement of trade to and from Indian ports and the unhindered exploration and exploitation of offshore resources.
- Help small friendly littorals by creating amphibious sealift capability.

Serious discussion on expanding the limited role of the navy did not occur until the turn of the century.

B. APPLICATION OF INDIAN NAVAL STRATEGY NAVAL OPERATIONS 1947–2000

1. Indo-Pakistan War 1965

The 1965 Indo-Pakistan War, while fought to a stalemate on the ground, was an embarrassment for the Indian navy. A Pakistani naval squadron bombarded the city of Dwarka on 7 September 1965 and in general, the Pakistan navy went largely unchallenged throughout the war. The Indian navy's failure to engage the Pakistani navy was blamed on the fact that after being largely employed in the Bay of Bengal[38] prior to

[38] A large portion of the Indian navy was deployed to the Bay of Bengal in response to Indonesian incursions into the Andaman and Nicobar island chain in 1964.

hostilities, the ships of the Indian fleet were conducting replenishment and maintenance in Bombay and, as a result, were not able to defend the western Indian coast against Pakistani naval attack.[39]

2. Indo-Pakistan War 1971

The 1971 Indo-Pakistan War demonstrated the efficacy of first generation Indian naval strategy. The Indian Navy's role in the conflict was to support the ground operation conducted by the Indian Army and Air Force. In keeping with objective of providing support to the Indian army from the sea outlined in the 1948 10 Year Plan, the navy leveraged its numerical superiority to establish control of critical areas in the north Arabian Sea and the Gulf of Bengal.

The Indian Navy held a significant advantage over Pakistan in terms of the number and quality of surface vessels. Vice Admiral Krishan noted that the fleet that was envisaged in the 10 Year Plan was not realized until the late 1960s.[40] This force while weak in the area of submarine and anti-submarine warfare was composed of an aircraft carrier, 1 cruiser, 6 destroyers, 8 frigates and 8 Russian made missile boats and 4 submarines as its war fighting core.[41]

Operationally, at the onset of the war, the Indian navy was split between Eastern and Western Naval Commands. The Western Command was the main effort and was tasked with blockading the port of Karachi and engaging the main Pakistani naval force. The mission of the Eastern Command was to assist in providing air support to Indian ground forces in East Pakistan. The Eastern fleet was centered around aircraft carrier *INS Vikrant* and dominated the waters of the Bay of Bengal, bombing airstrips and targets of opportunity in East Pakistan. In addition, the task force established sea control preventing the escape of Pakistani Army by sea. There was no significant surface or air threat to Vikrant group throughout the campaign.[42]

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[39] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 19–21.

[40] Krishnan, *A Sailor's Story* 181.

[41] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 25–27.

[42] Roy-Chaudhury, *Sea Power & Indian Security*: 68–69. Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 22–23.

In the Western theater, the Indian navy employed a task force of destroyers, cruisers and frigates to combat Pakistan's main naval force. Small Russian made missile boats employing anti-ship missiles proved deadly, sinking a Pakistani destroyer and minesweeper on the night of December 4th near the Port of Karachi. Another missile boat attack on the night of December 8th damaged Karachi port facilities and an anchored oil tanker. These attacks convinced Pakistan naval command to keep its surface combatant vessels along the pier in Karachi Port and out of the fight. The Pakistani air force did not pose a threat to Western Fleet operations.

Pakistan's naval advantage just before the outbreak of hostilities was in the area of submarines. The submarine arm could have allowed Pakistan to seriously challenge Indian sea control if timely intelligence tracking Indian fleet movements was exploited. The *INS Khukri*, the only Indian surface vessel lost to enemy action during the conflict, was sunk on December 9th by the Pakistani submarine Hangor near the Bombay coast. Anti-submarine operations following the sinking of the Khukri were not able to locate the Hangor or any other Pakistani submarine. There was a great deal of consternation at Indian Naval Headquarters during the months leading up to the conflict as to whether or not to employ India's only aircraft carrier, the *INS Vikrant*, in the upcoming war because of its vulnerability to Pakistan's submarines. These concerns factored into the decision to deploy the Vikrant to the Bay of Bengal instead of the north Arabian Sea. A well-conceived deception operation conducted by the Eastern Fleet led the Pakistani submarine Ghazni away from the carrier task force and led to its destruction outside of Vishankhapatnam port on 4 December.[43] The Ghazni could have done significant damage to the Vikrant task force because, due to the Indian navy's primitive anti-submarine capability, it was highly vulnerable to subsurface attack. Overall, the Pakistani submarine force was underutilized during the war.

The Indian Navy was able to establish effective sea control of the sea approaches to East and West Pakistan by the 10 December. The 1971 war presented India with the

[43] Krishnan, *A Sailor's Story* 360–61.

opportunity to establish the regional navy hierarchy. India's navy overcame maintenance challenges and capability gaps to confirm its dominant position as south Asia's primary naval power.

3. Indian Peace Keeping Force

At the request of the Sri Lankan government, the Indian Peace Keeping Force (IPKF) was deployed to northern Sri Lanka on July 30th, 1987 to combat LTTE insurgents. The naval component of the peacekeeping operation, Operation Parwan, leveraged India's regional maritime superiority to disrupt LTTE communication with southern India and to transport India troops, equipment and supplies into the Sri Lanka. On average, the navy deployed (4) surface combatants to support the operation.[44] The Indian navy's control of the waters surrounding northern Sri Lanka (Palk Bay, Palk Strait, Gulf of Manor) set the conditions for the successful interdiction of LTTE ships smuggling weapons and personnel to and from southern India. In addition, Indian Marine Commandos were active on shore, conducting raids against LTTE base camps and vessels. Naval air assets conducted reconnaissance and other support to the deployed force. The LTTE's seagoing force of small patrol boats was no match for Indian naval power in the area. Operation Parwan resulted in the (76) militant boats destroyed, (139) boats captured and more than (15000) incidents / interceptions. No Indian ships were lost to hostile fire during Operation Parwan.[45]

4. Support for the Maldivian Government during the 1988 Coup

In 1988, the Indian Navy supported the defense of the Maldivian government following an attempted coup by Sri Lankan mercenaries. Maritime Operation CACTUS was conducted 4–5 November 1988 to intercept an escaping cargo ship carrying the mercenaries in addition to hostages. After being flushed from Male by a detachment of Indian soldiers that was airlifted to the Maldives on the night of 3 November, the mercenaries seized the cargo ship Progress Light and set course for Sri Lanka. The Indian

[44] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 192–96.

[45] Ibid.

Navy intercepted the Progress Light and facilitated hostage negotiations by embarking a hostage negotiation team onboard the frigate Godavari and ratcheting up pressure on the mercenaries through an escalating series of warning and disabling fire. After a well-placed shell disabled the Progress Light, a naval boarding party rescued the hostages and captured the mercenaries. Operation CACTUS was unique in that it featured Indian combat operations initiated further from home shores than any time in its history.[46]

5. Kargil War

The Kargil War was a limited conflict between India and Pakistan over disputed territory in Kashmir. The Indian navy deployed naval assets in anticipation of the conflict escalating to a major war. Ships from the Indian Eastern Fleets joined those from the Western Fleet to conduct surveillance off of the Pakistani coast and training in addition to securing offshore assets. Indian ships deployed in the north Arabian Sea forced Pakistan to conduct escorts of its oil tankers beginning in June. By the end of the conflict in early July, the Indian navy had successfully deterred Pakistan's navy from operating along India's coast and threatening shipping lanes.[47]

Other Missions

The Indian navy has participated in several U. N. sponsored peacekeeping missions during the early 1990s.[48] In addition to peacekeeping initiatives, the Indian navy has participated in several anti-piracy / anti-smuggling operations in the Indian Ocean littoral region during this period as well.[49]

C. INDIA NAVY BUDGET 1948–2000

The limited role endorsed by policymakers for the Indian navy was reflected in the military budget for almost 50 years post-independence. The navy consistently

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[46] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 199–200.

[47] *Transition to Guardianship The Indian Navy 1991–2000* (Lancer, 2009). 66–67.

[48] The Indian Navy supported Indian ground forces primarily with transportation to and from theater. Naval operations MUFFET, SHIELD AND BOLSTER provided lift to Indian troops and equipment into and out of Somalia during U.N. Operation RESTORE HOPE.

[49] Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: 52–60.

received less than 15% of budget share; a share in the single digits was the rule rather than the exception (Table 1). With India's primary security threats arising from the northern part of the subcontinent, spending on the navy was lower in priority than the army and air force. Implementation of the 10 year plan was facilitated by rising levels of naval spending in the 1950s. Naval budget share rose from 4.7% in 1951 to a high of 11.7% in 1960–61. India's loss to China in the 1962 war prompted a sharp cut in naval spending to 3.4% of budget share in 1963–64. The navy's role in the victory over Pakistan in 1971 was rewarded with an increasing budget share throughout the 1970s for additional ship purchases and other upgrades. The naval budget share rose to 9.65% by 1977–78 and averaged around 9% throughout the early 1980s. The mid-1980s heralded an uptick in naval spending resulting in the naval budget share increasing to from 12.5% in 1985–86 to 13.5% by 1989–90. This budget increase was spurred by the necessity to replace ageing surface ships and invest modern submarines and to enhance naval aviation.[50] India's second aircraft carrier, *INS Viraat* was purchased and inducted during this period.[51] Due to the Indian navy's reliance on foreign hardware, these gains were undermined by high inflation and low foreign reserve levels stemming from the 1987 food crisis and 1991 Gulf War.[52] A decline in naval budget share began in the 1990s falling to 11.2 percent by 1992–93. In comparison, during the 1980s the Indian army's share of the defense budget averaged 59.7% and the Indian air force averaged 22.8% of the budget.[53] The naval budget did not see a significant boost until 1998.

[50] Roy-Chaudhury, *Sea Power & Indian Security,* 176; Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: 20.

[51] The INS Viraat was purchased from Britain in 1985 and inducted in 1987. The Viraat was formerly known as the HMS Hermes.

[52] Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: xxiv.

[53] All budget figures were derived from Roy-Chaudhury, *Sea Power & Indian Security*: 187–88.

Year	% Budget Share
1948–49	4.7
1951–52	4.81
1955–56	10.11
1960–61	11.61
1963–64	3.39
1969–70	6.64
1973–74	7.69
1977–78	9.65
1982–83	10.61
1987–88	12.85
1988–89	13.48
1992–93	12.98

Table 1. Indian Navy Budget Share[54]

D. INDIAN NAVAL PROCUREMENT 1948–2000

Naval ship procurement was subject to low budgetary allocation and strategic priority. Despite these obstacles naval planners succeeded in building a force that maintained naval superiority in the waters surrounding the Indian subcontinent. At independence the Indian navy was made up of ships that were discarded from the British navy; in 1947 the Indian navy possessed only 3 major warships, (2) frigates and (1) corvette in addition to 30 other vessels.[55] Using the 10 year plan as a template, naval

[54] Rahul Roy-Chaudhury, *Sea Power & Indian Security* (London: Brassey's, 1995).

[55] http://indiannavy.nic.in/print/book/export/html/950

shipbuilding and procurement was driven by the goal to establish an Indian fleet that had suitable mix of frigates, cruisers, destroyers, submarines and other support ships. Not surprisingly, Britain was India's primary supplier of naval hardware during the 1950s (Table 2). India purchased destroyers, cruisers and minesweepers from Britain. Britain also supplied India's first aircraft carrier from Britain in 1957. Britain continued to supply India with naval hardware into the 1980s including Sea Harriers multipurpose aircraft, Sea King helicopters as well as the aircraft carrier, *INS Viraat*.[56] Beginning in the 1960s the Soviet Union became a primary supplier of ships, weapons, aircraft and other systems to the Indian navy.[57] Starting with the purchase of patrol boats in 1965, the Soviets supplied the Indian navy with submarines, anti-submarine vessels, missile boats, guided missile destroyers and naval aircraft. Soviet technology was the primary foundation upon which the naval expansion of the 1980s was built.[58] The Indian navy commissioned several new ships during the 1980s, upgrading just about every class of vessel. New guided missile destroyers, minesweepers and missile boats were acquired from Russia.[59]

After being harried by Pakistani submarines during the 1971 war, India turned its sights toward strengthening its submarine force. The navy purchased (8) Kilo class Russian submarines an inducted them into service from 1986–1990. The Kilo is designed for anti-submarine and anti-shipping operations in littoral areas. The navy also purchased the Type 1500 diesel submarine from German supplier HDW. The Indians purchased their second aircraft carrier the INS Viraat from Britain and inducted it into service in 1987.

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[56] Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: 20.

[57] G. C. Thomas Raju, "The Indian Navy in the Seventies," *Pacific Affairs* 48, no. 4 (1975–1976): 502.

[58] Roy-Chaudhury, *Sea Power & Indian Security*: 130–31.

[59] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 125–26.

Ship Type	Quantity	Country of Origin	Year
Destroyers	3	Britain	1948
	3	Britain	1953
	3	Russia	1980–83
	2	Russia	1986–87
Cruiser	1	Britain	1948
	1	Britain	1957
Frigates	3	Britain	1958–59
Submarines	4	Russia	1967–69
	4	Russia	1973–74
	2	Germany	1986
	7	Russia	1986–90
Aircraft Carrier	1	Britain	1961
	1	Britain	1987
Missile Boat	8	Russia	1971
	8	Russia	1976–77
Fleet Tanker	1	Germany	1967
Landing Ship (Tank)	1	Britain	1949
	2	Russia	1966
	4	Poland	1975–76
	4	Poland	1984–86

Table 2. Indian Navy Foreign Procurement[60]

Britain remained the primary supplier of naval aircraft, providing both the workhorse carrier based fighter and general purpose helicopter, the Harrier and the Sea King, respectively.[61] The 1990s saw a dramatic slowdown in Indian ship procurement.[62]

Indigenization of ship building began in the early 1960s with the nationalization of the subsidiaries of certain Western shipbuilding conglomerates based in India.[63] These acquisitions were developed into Mazgon Dockyard Ltd, Garden Reach Shipbuilders and Goa Shipyard (Table 3). By 1968, Mazgon was delivering Leander class frigates to the

[60] Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: 20–24..

[61] The first batch of 6 Harriers was delivered in 1983 and the last of 23 total aircraft was inducted in 1992. *Transition to Guardianship The Indian Navy 1991–2000*: 154.

[62] David Scott, "India's "Grand Strategy" for the Indian Ocean Mahanian Visions," *Asa-Pacific Review* 13, no. 2 (2006): 130.

[63] Roy-Chaudhury, *Sea Power & Indian Security*: 156.

Indian navy. Since the delivery of this first indigenous ship, Indian shipyards have produced many classes of ships including frigates, destroyers, submarines, corvettes, landing ships (tank), fleet tankers among others.[64] The lessons learned during the austere budgetary periods experienced by the Indian navy poised the Indian shipbuilding complex to tackle more sophisticated naval construction projects in the 21st century. For example, Project 17 was initiated in 1994 to build frigates that incorporate complex technologies such as stealth signature reduction design features.[65]

Ship Type	Quantity	Shipyard	Year
Destroyers	2	Mazagon	1991–93
Frigates	3	Mazagon	1980–84
Submarines	2	Mazagon	1989–92
Corvettes	4	Mazagon	1986–91
	3	Garden Reach	1988–92
	1	Goa	1992
Fleet Tanker	1	Garden Reach	1993
Landing Ship (Tank)	1	Garden Reach	1984

Table 3. Indian Navy Indigenous Ship Production[66]

E. REGIONAL NAVAL SUPERIORITY–GREEN WATER NAVY OPERATONS

India has held maritime superiority over Pakistan since the inception of both states in 1947 (Table 4). Pakistan was the only state in south or southeast Asia that possessed a navy capable of challenging India. There have been periods when Pakistan held a qualitative advantage over India in certain types of vessels however, these advantages were short lived. For example, during the period before and immediately following the 1971 war, Pakistan's submarine force was superior to India's. India quickly worked to neutralize this advantage by enhancing its anti-submarine warfare capabilities and acquiring Kilo class submarines.

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[64] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*,125–26.

[65] *Transition to Guardianship The Indian Navy 1991–2000*, 128–31.

[66] Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*, 120–25, 28.

	India	Pakistan
1947	7	4
1971	35	16
1987	64	38

Table 4. India Pakistan Navy Comparison[67]

Despite is budgetary challenges, India was able to build a navy which was the strongest of any state in the region and maintained its status as the south Asia's strongest power. The maintenance of this balance was not emphasized in policy documents,

The Indian navy was able to construct a capable force that was able to fulfill policy objectives and to dominate the waters of the NIOA. Chinese presence and influence in the NIOA began in 1985 and accelerated steady through the 1990s and into the 21st century.

[67] "World Navies, Pakistan," (2012), https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1322696. "World Navies, India," *Jane's*(2012), https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1322696. G. C. Thomas Raju, "The Indian Navy in the Seventies," *Pacific Affairs* 48, no. 4 (1975–1976). Ravi Rikhye, "Assessing Pakistan's Military Expansion since 1971," *Economic and Political Weekly* 24, no. 8 (1989).

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III. 21ST CENTURY NAVAL DOCTRINE

The information in this chapter illustrates that the Indian national security elite endorsed a blue water naval doctrine. The establishment has supported this strategy intellectually, financially and through operations and training. The Indian navy foreshadowed the large scale commitment to its blue water strategy in the 1990s by establishing links to foreign navies, most notably, the U.S. navy. Since the decision to pursue a blue water naval strategy was made in the early 21st century, activities such port calls to areas outside of the Indian Ocean region and training with international militaries has increased dramatically. Naval construction and procurement patterns support the idea that the goal of the Indian navy is to project power far from its home shores.

A. NAVAL DEVELOPMENT DURING THE 1990S

In the early 1990s, the Indian navy began to expand its horizons and operate in wider waters than those that surround the subcontinent. The U.S. initiated contact with the Indian navy in 1991 by proposing a set of measures that would increase mutual understanding as well as interoperability. The Kickleighter proposals[68] opened the door of cooperation between the U.S. and Indian navies.[69] The proposals resulted in the establishment of committees for peer to peer collaboration and the initiation of the MALABAR series of exercises.[70] The MALABAR exercises were the first instance where the U.S. and Indian navies trained together.[71] This early cooperation between the Indian and U.S. navies was short lived because of sanctions imposed by the U.S. in response to Indian nuclear weapons testing in 1998. Indian—U.S. naval cooperation and training resumed in 2002.[72]

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[68] These proposals were named after Lt. General Claude Kickleighter, the former commander of U.S. Army Forces, Pacific.

[69] Abhay R Karve, "Indo-U.S. Strategic Relations Moving From Estrangement to Engagement" (National War College, 2003), 91.

[70] Ibid., 35–36.

[71] Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: 39–40.

[72] Karve, "Indo-U.S. Strategic Relations Moving From Estrangement to Engagement," 35.

In conjunction with increased contact with Western navies, the Indian navy also reached out to their south and southeast Asian counterparts. Beginning in 1995, the Indian navy played host to the navies of countries such as Bangladesh, Sri Lanka, Thailand and Singapore at Port Blair in the Andaman and Nicobar Islands. The MILAN[73] conferences were initiated to facilitate understanding and cooperation between the Indian navy and other regional navies. MILAN conferences were held in 1995, 1997 and 1999 and continue on a bi annual basis.[74]

These efforts were tentative first steps of what evolved into a comprehensive naval strategy for the 21st century. While the navy never gave up on its Mahan/Panikkar inspired vision the Indian navy possessing sea control capability, the cold reality is that the Indian navy of the 1990s was in a state of disrepair. Top naval leadership and the national security elite were not committed to turning the Indian navy into a force that could do more than ply the waves of the Bay of Bengal and Arabian Sea. The 1990s ended a period where ship decommissioning proceeded at a vociferous rate and capital upgrades were more than a half decade behind schedule.[75] Between 1986 and 1996, no new orders were placed for ships.[76] Indian admirals decried that modernization started in the 1980s was "setback" and that the function of the navy was "forgotten."[77]

The strategic outlook of India's navy began to change in the late 1990s as the election of the BJP led government reopened the conversation about India's place in the world during the new millennium and the role of the Indian armed services.[78] Given their desire to leverage Indian economic growth to transform India from a doggedly Third World state into a contender for global power and influence, the BJP government was more likely to support increased military spending and to tolerate an increase in military influence. The Indian navy took advantage of this opportunity to outline a strategic

[73] Milan means "meeting" in Hindi. Hiranandani, *Transition to Guardianship The Indian Navy 1991–2000*: 31.

[74] *Transition to Eminence The Indian Navy 1976–1990*: 31–32.

[75] Scott, "India's "Grand Strategy" for the Indian Ocean Mahanian Visions," 108.

[76] Dasgupta, *Arming Without Aiming India's Military Modernization*: 90.

[77] Scott, "India's "Grand Strategy" for the Indian Ocean Mahanian Visions," 105.

[78] Ibid., 107.

choice that differed from the status quo of South Asian naval dominance and instead advocated a larger blue water navy capable of working in concert with other major navies.

The 1998 a strategy paper drafted by the navy titled, *Strategic Defense Review: The Maritime Dimension – A Naval Vision* outlined a more substantial role for the Indian navy moving forward. The strategic choice outlining a international, blue water Indian navy was presented to policymakers as the path to follow to meet 21st century challenges. The report envisions a powerful Indian Navy that would "

> have sufficient maritime power not only to be able to defend and further India's maritime interests, but also to deter a military maritime challenge posed by any littoral nation, or combination of littoral nations of the Indian Ocean Region (IOR), and also to be able to significantly raise the threshold of intervention or coercion by extra-regional powers." In addition the navy would .."..be increasingly used to support national diplomatic initiatives in the region and beyond." The overarching objective of naval strategy would be to .."consolidate its maritime power over the next 25 years."[79]

B. THE INDIAN MARITIME DOCTRINE–CODIFICATION OF BLUE WATER STRATEGY

By the middle of the 2000s the new Indian naval strategy was fully formed and expressed in a series of doctrinal and strategy documents. The Indian Navy Maritime Strategy was published in 2004 and was the clearest expression of Indian naval strategy and intent to date. This document was updated in 2009. The navy that was outlined in the Maritime Doctrine was blue water in scope with an eye toward interoperability within a larger naval coalition.

One of most glaring breaks from the naval strategy of past decades that was outlined in the Maritime Doctrine was the greatly expanded area of interest set forth for the Indian navy. Instead of a narrow focus on home water defense the Maritime Doctrine declares that the new areas of interest range from the Persian Gulf to the Straits of Malacca. The primary areas of interest are: 1) Maritime Zones of India; 2) the Arabian Sea and Bay of Bengal; 3) the choke points that serve as access points to the Indian

[79] Ibid.

Ocean; 4) the Persian Gulf; 5) international shipping lanes crossing the Indian Ocean and the island countries located in their vicinity.[80] These primary areas of interest are supplemented by secondary areas identified as: 1) the southern Indian Ocean; 2) the Red Sea and its littoral states ; 3) the South China Sea and other areas of the west Pacific Ocean and certain littoral nations located within the area; 4) "other areas" based on location of Indian Diaspora and overseas investments.[81] The first two primary areas of interest encompass the terrain that the Indian navy has traditionally sought to retain dominance. Every other area outlined represents a significant expansion of the navy's operating range and responsibility.

The Maritime Doctrine lists several 'enabling concepts' that will allow the Indian navy to operate effectively within its expanded areas of interest. The central enabling concept is sea control. Sea control is defined as the ability of a navy to solely operate within a defined areas while simultaneously denying that area to an adversary.[82] Sea control is three dimensional and includes the sea surface, subsurface and airspace. The Indian navy has only had the capability to exercise sea control in limited circumstances against south Asian adversaries. The sea control capability that is called for in the Maritime Doctrine is designed to be effective against 'extra regional' powers in addition to south Asian threats. Sea control is put forth as 'the central concept around which the Indian navy is structured'.[83] Sea denial as a competing strategy is relegated in the Maritime Doctrine to secondary importance as a component of a sea control.[84]

Several additional concepts are outlined in the Maritime Doctrine that describe essential capabilities that the Indian navy is seeking to strengthen or develop. The Doctrine calls the capability to interdict an adversary's Sea Lanes of Communication

[80] *Indian Maritime Doctrine*: 67–68.

[81] Ibid.

[82] Ibid.

[83] Ibid., 77.

[84] Ibid.

(SLOC) crucial to "weaken the enemy's war waging ability."[85] The SLOCs that pass through the Indian Ocean are extremely important to east and southeast Asian nations, especially China.

1. Power Projection

Power projection is an important capability that is outlined in the Maritime Doctrine that, if fully developed, would place the Indian navy in an exclusive club. According to Ladwig, power projection is "[t]he ability of a nation to apply all or some of its elements of national power—political, economic, informational, or military—to rapidly and effectively deploy and sustain forces in and from multiple dispersed locations to respond to crises, to contribute to deterrence, and to enhance regional stability."[86] Ladwig describes military power projection in nine dimensions: 1) securing lines of communication; 2) noncombatant evacuation operations; 3) humanitarian assistance; 4) peacekeeping; 5) showing the flag; 6) compellence / deterrence; 7) punishment; 8) armed intervention; 9) conquest. Ladwig describes the first four aspects of power projection as "soft" military power where force is not employed with the remainder being examples of hard military power.[87] The Indian navy of the future will be structured around aircraft carrier task forces that will serve as the principle vehicle for not only sea control but for power projection as well. The Maritime Doctrine outlines a suite of capabilities that will enable power projection: 1) Amphibious Assault; 2) Expeditionary Operations; 3) Distant Operations.

Amphibious Assault means projecting combat power from the sea to the shore. Amphibious Assault is executed to seize a beachhead to enable a follow on assault or to raid enemy territory from the sea. Expeditionary Operations can encompass Amphibious Assault but are differentiated by the conduct of sustained operations ashore. There is a considerable logistics component to Expeditionary Operations because these operations are designed to allow forces to originate from the sea and to operate on foreign soil for an

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[85] Ibid., 78.

[86] Walter C. Ladwig, "India and Military Power Projection," *Asian Survey* 50, no. 6 (2010): 1166.

[87] Ibid., 1166–67.

undetermined amount of time. The Maritime Doctrine identifies Distant Operations as being those conducted at 'considerable' distance from Indian territory. Distant Operations rely on "access, mobility and sustenance," in order to project power or conduct other tasks to serve national interests. The identification of these power projection capabilities is a significant departure from a navy that was concerned mostly with defense of waters in the Indian near abroad.

One could argue that Operation Jupiter[88] in support of the IPKF on Sri Lanka was an application of power projection with rudimentary experiences in expeditionary operations and amphibious assault.[89] However, to say that recent doctrinal development was necessitated by that experience is a stretch. The 15-year gap between the lessons learned from Operation Jupiter and the publication of the Maritime Doctrine attest to the fact that these power projection concepts are not simply an expression of operational lessons learned.

The Indian navy has committed extensive intellectual capital to the development of concepts that support the objective of power projection. The publication of the Joint Amphibious Operations Doctrine in 2008 is a reflection of this trend. There is only a select few navies in the world that can project power by means of carrier borne aircraft and amphibious forces. Excluding India, only 8 world militaries possess aircraft carriers, amphibious troops, amphibious sealift capability and support vessels.[90]

The roles that the Maritime Doctrine outline for the Indian navy are Military, Diplomatic, Constabulary and Benign.[91] The execution of these roles would be made possible by implementing the aforementioned enabling concepts. The objectives of the

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[88] Operation Jupiter was a planned to support the IPKF by using the INS Viraat to serve as a platform to launch amphibious raids against the LTTE. The operation was cancelled before execution. Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 195.

[89] Ibid., 194–95.

[90] These nations are the United States, Russia, Great Britain, France, Spain, Italy, Brazil and China. The aircraft carriers these nations possess vary in size but all can support fighter/bomber aircraft and helicopters capable of striking land targets from the sea. Around 40 nations have some sort of amphibious operations capability. "World Navies, India," *Jane's*(2012), https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1322696.

[91] *Indian Maritime Doctrine*: 91.

Indian navy in the military role are: 1) deterrence against war; 2) decisive military victory; 3) securing Indian territory, offshore assets and citizens against attack from the sea; 4) influence affairs on land; 5) safeguard Indian mercantile trade; 6) safeguard Indian national security interests.[92] The Military role encompasses most of what the Indian navy has traditionally done; deterring military aggression from the sea, protecting home waters and Indian shipping. In contrast, the current set of objectives requires a more muscular naval capability. The call for the Indian navy to achieve 'decisive military victory' harkens back to the Mahanian school of thought and is not keeping with the traditional role of the post-independence navy. In addition, the doctrine veers into ambitious territory by calling for an Indian navy that is able to "influence events on land." The influence sought after goes far beyond supporting the Indian army by attacking the coasts of regional adversaries. Influence in this case involves power projection, up to and including the use of amphibious forces and expeditionary operations.[93]

The Diplomatic role is a marked expansion of the political role of the Indian navy. While the Indian navy has always visited foreign ports and, since the 1990s operated alongside foreign navies, the articulation of the Diplomatic role in the Maritime Doctrine underscores the importance of international interaction in contemporary naval strategy. The objectives of the Diplomatic role are: 1) strengthen political relations and goodwill; 2) strengthen defense relations; 3) portray credible defense posture and capability; 4) strengthen maritime security in the Indian Ocean region; 5) promote regional and global stability.[94] The Diplomatic role lies at the heart of the international blue water naval strategic option and it is the main area that separates the current Maritime Doctrine from traditional Indian naval strategy.

Traditional methods of Indian naval diplomacy such as goodwill visits are outlined in the Maritime Doctrine as an outward expression of positive diplomatic relations. During the first decade of the 21st century, the frequency of Indian navy visits outside of the Indian Ocean region has increased. The Indian aircraft carrier *INS Viraat*

[92] Ibid., 92.

[93] Ibid., 94.

[94] Ibid., 106–07.

deployed to Singapore, Malaysia and Indonesia for the first time in 2005.[95] The Indian navy now sails to Europe, East Asia, Africa and the Middle East much more than it did for the first 4 decades of its existence.

The Maritime Doctrine calls for the Indian navy to positively interact with the navies of friendly countries through joint exercises and operations and to deter threats to Indian shipping.[96] The Diplomatic role also takes on a global twist as the ability to operate under the framework of United Nations peace support operation is a stated aim.[97]

The Indian navy has participated in several bi-lateral or multi-lateral naval exercises since the turn of the century. The Indian navy has exercised with the U.S., France, Russia, China, Sri Lanka, Thailand, Myanmar, Bangladesh, South Africa, Brazil, Singapore, Brunei and Australia from 2002–2010. Navies from countries in the western Indian Ocean have taken part in the MILAN exercises. The MALABAR exercises between the U.S. and Indian navies resumed in 2002. Russia and India have conducted the INDRA naval exercises since 2003. France has dispatched vessels 10 times to train with the Indians in the Arabian Sea, with the latest iteration of the VARUNA exercises conducted in 2010. Rising powers South Africa and Brazil have joined with India since 2008 to hold the India-Brazil-South Africa Maritime (IBSAMAR) exercise. The Indian navy has even trained with rival China, albeit on a very limited basis, off of the Chinese coast in 2011.[98]

With the exception of the requirement to support the Indian Army during war, the Constabulatory Role closely resembles the original objectives of the Indian navy set forth in the 10 Year Plan. The objectives o the Constabulary Role are: 1) coastal defense; 2) security of the Indian exclusive economic zone; 3) good order at sea.[99] Counterterrorism and anti-piracy figure prominently under the Constabulatory Role.

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[95] Cdr Gurpreet S Khurana, "China-India Maritime Rivalry," (*Indian Defence Review* 23, no. 4, 2009): 4.

[96] *Indian Maritime Doctrine*: 108–09.

[97] Ibid., 112.

[98] "World Navies, India."

[99] *Indian Maritime Doctrine*: 116.

The Benign Role is a catchall to describe the Indian navy's vision for participation in humanitarian relief operations and other support tasks such as search and rescue.[100] This role is not new to the Indian navy, however the Maritime Doctrine represents the first time that the objective has been codified. During the 21st century, the Indian navy has participated in international humanitarian relief operations. The navy distinguished itself during tsunami relief operations in 2004–2005. Thirty two ships and 20 aircraft were deployed to assist in relief operations in the Maldives, Sri Lanka and Indonesia.[101] In contrast, from 1970 to 1995, the Indian navy did not participate in humanitarian assistance missions in response to cyclones in the south Asia region.[102]

C. 21ST CENTURY PROCUREMENT SUPPORTS A BLUE WATER STRATEGY

The backbone of the Indian navy under the international blue water strategy is the aircraft carrier. The 21st century Indian navy is to be structured around three aircraft carrier battle groups; one battle group would be operate from in the east and west coasts of Indian respectively with the third in maintenance. By the end of the 1990s, the India navy possessed one operational aircraft carrier. The *INS Vikrant* was decommissioned in 1997, leaving only the *INS Viraat* as the nation's sole aircraft carrier. In 2004, a deal was inked to purchase the Russian aircraft carrier Admiral Gorshkov.[103] The *Admiral Gorshkov* is a 270 m carrier that displaces 45,000 tons; it is a medium sized carrier that is larger than the *INS Viraat* but smaller than a U.S. Nimitz class carrier. The Admiral Gorshkov (re-designated the *INS Vikramaditya*) has been docked in the Russian shipyard in Severodvinsk undergoing refit. The *Vikramaditya* is scheduled to be fully operational by 2012. In addition to the *Vikramaditya*, the Indian navy is building two more carriers indigenously. The Air Defense Ship (ADS) is a 225m carrier that displaces 37,500 tons that is currently being built by Cochin Shipyard Ltd. The ADS is scheduled for delivery

[100] Ibid., 120–22.

[101] "Indian Naval Diplomacy: Post Tsunami," Vijay Sakuja
http://www.ipcs.org/article/navy/indian-naval-diplomacy-post-tsunami-1640.html

[102] Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 205–06.

[103] According to Cohen and Dasgupta, negotiations to purchase the Admiral Gorshkov began in 1994.

by 2015. The last carrier to be inducted by 2022 is another larger, ADS currently scheduled to begin construction in 2017.[104] None of the carriers currently being developed are nuclear powered.

The Indian government approved the purchase of (6) Scorpene class French submarines in 2005. These diesel submarines are scheduled to replace the navy's ageing fleet of diesel subs, primarily Kilo class. The Scorpene subs are being built in India, however due to cost overruns and other delays, the delivery window has been pushed back to between 2015–2021. The navy inducted its only nuclear powered ballistic missile submarine, the *INS Arihant* in 2009 with plans to complete two more by 2017.[105] Given the expressed desire of the navy to operate carrier task forces from the Persian Gulf to the Straits of Malacca, the absence of fast attack variant nuclear submarines from near term development plans is notable.

After procuring its first Landing Port Dock (LPD) vessel in 2006, the Indian government approved a request to procure 4 additional LPDs. An LPD can transport up to 1000 soldiers in addition to associated heavy equipment and supplies over long distances across the open ocean. In addition to LPDs, the Indian Navy is acquiring Landing Craft Vehicle and Personnel (LCVP) and Landing Craft Utility (LCU) vessels. These smaller craft travel inside of LPDs and are designed to transport troops and equipment to shore. Along these same lines, a tender has been placed for Landing Craft Mechanized (LCM). These vessels are tracked, armored and can travel faster than LCVPs and LCUs. An LCM is a necessary capability to enable amphibious assault unto contested shores.[106]

The Indian Navy's procurement of platforms that will give its forces a true amphibious assault capability, however it is purchasing a capability that is already out of

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[104] "World Navies, India."

[105] Dasgupta, *Arming Without Aiming India's Military Modernization*: 91. "World Navies, India."

[106] "World Navies, India."

date. The LPD design that the Indians are modeling their newest vessels on is more than 37 years old and has already been mothballed by the U.S. Navy in favor of the newer San Antonio class LPDs.

As previously noted, the navy cut deals in 2004 to and 2010 procure 45 MiG 29 (naval variant) fighters to operate from its carriers. The first (16) MiGs were delivered in 2004 with the remainder handed over starting in 2012. In addition, the navy asked for bids to replace ship borne helicopters, reconnaissance and patrol aircraft.

The Indian navy is currently updating its destroyer, frigate and corvette force through a combination of foreign procurement and indigenous production. The first new destroyer, *INS Kolkata* (Project 15A) was launched in 2005. The first new frigate, *INS Shivalik*, was launched in 2003. In the case of the Kolkata class destroyers, due to construction delays the first ship is scheduled to be commissioned in late 2012. An order for 4 additional destroyers was placed in 2010 worth $6.5 billion USD. Construction delays also plagued the Project 17 stealth frigate program delaying the commissioning of ships by 5 years. The Indian navy is also upgrading its corvettes; an order for the first four of a series of 12 vessels was placed in 2003. The P-28 corvettes are currently under construction with a planned delivery date in 2015 (Table 5). It is notable that a significant portion of this development is indigenous including anti-ship missiles, radars and other sensors. Foreign expertise was called upon to assist with modular construction techniques for the Shivalik class frigates.[107]

[107] The information contained in this paragraph was derived from the following sources: *Arming Without Aiming India's Military Modernization*: 91. "World Navies, India."

Ship Type	Quantity	Manufacturer	Under Construction?	Year Commissioned	Value*
Frigate	3	Mazagon Docks	Complete	INS Shivalik (2010), INS Satpura (2011), INS Sahyadri (2012)	
Frigate	7	Mazagon Docks, Garden Reach Shipbuilders and Engineers	Pending	N/A	$9.4 billion USD
Destroyer	4	Mazagon Docks	(1) complete, (3) Ongoing	INS Kolkata scheduled 2012, (3) pending	
Destroyer	4	Mazagon Docks	Pending	TBD	$6.5 billion USD
Corvette	4	Garden Reach Shipbuilders and Engineers	Ongoing	Est. 2015	$140 million USD

*Contract values listed for tenders made after the year 2000.

Table 5. Surface Combatant Development[108]

[108] Stephen Cohen and Sunil Dasgupta, *Arming Without Aiming India's Military Modernization* (Washington, DC: Brookings Institution Press, 2010). 90–91. "India's third indigenous stealth frigate INS Sahyadri commissioning on July 21," The Economic Times, http://articles.economictimes.indiatimes.com/2012–06–25/news/32409379_1_indigenous-stealth-frigate-ins-satpura-ins-shivalik. "World Navies, India."

D. THE INDIAN NAVAL BUDGET IN THE 21ST CENTURY

As I have highlighted in Chapter IV, spending on the Indian naval has risen considerably after the year 2000. However, despite the surge in spending, the percent budget share allocated to the navy has not cracked the 20% mark. In fact, by fiscal year 2008, the allocated budget share fell below 15% to 13.8%. In 2009, allocated budget share was 13.3%.[109] (Table 6) The pattern of naval budget allocation last years of the aught decade began to resemble historic patterns. It should be noted that the budget share conversation is within the context of a larger total defense spending. For example, the dollar value of Indian military spending in 2008 was $24.7 billion USD up from $11.4 billion in 1988.[110] The Standing Committee on Defense in the Indian parliament (Lok Sabha) recommended in 2007 that the Ministry of Defense up the budget share for the navy to 30%.[111] That call fell on deaf ears. The assumption that naval spending would continue to increase is a key prerequisite for the construction and maintenance of a blue water navy. The commitment of the national security elite to this goal at this point is unclear.

2005–2006	17.3
2006–2007	17.3
2007–2008	17.4
2008–2009	13.8
2009–2010	13.3
2010–2011	14.1

Table 6. Percent Naval Budget Allocation[112]

[109] Lok Sabha Secretariat, "Standing Committee on Defence (Fourteenth Lok Sabha) Demands for Grants (2008–2009)," (New Delhi: Ministry of Defence, 2008).

[110] Dasgupta, *Arming Without Aiming India's Military Modernization*: 18.

[111] Secretariat, "Standing Committee on Defence (Fourteenth Lok Sabha) Demands for Grants (2008–2009)," 55.

[112] Lok Sabha Secretariat, "Standing Committee on Defence (Fifteenth Lok Sabha) Demands for Grants (2011–2012)," (New Delhi: Ministry of Defence, 2012), 19.

It is clear from examining the activities of the Indian navy since the turn of the century that the Indian national security elite has chosen the option of implementing a blue water naval strategy. This strategy has been codified in doctrine and naval construction plans lock the Indian security establishment into at least a partial realization of the strategy. Having a navy that is able to project power far from home has gained to support of the security establishment and is viewed as India's best bet to blunt Chinese influence in the NIOA.

IV. STRING OF PEARLS ANALYSIS, ECONOMIC IMPLICATIONS, MILITARY FEASIBILITY AND THREAT PERCEPTION

In this chapter, evidence will be presented that Chinese economic assistance to develop ports in the Indian Ocean littoral was a manifestation of China's soft power strategy. Since the turn of the century, China has utilized its extensive foreign currency reserves to extend assistance to nations for infrastructure and other investments. This aid is a way for China to establish and maintain friendly relations with states in order to gain access to resources such as oil, natural gas, minerals or to gain access to markets. The nature of Chinese assistance to Indian Ocean littorals falls is to enable access to key strategic transportation nodes. There is little evidence that indicates that these relationships had any military component. These relationships will be examined in detail in what follows. In addition, the feasibility of establishing and maintaining Chinese naval bases will be explored. It may appear to the Indian security establishment that Chinese plans to establish a network of naval bases in the NIOA is a stroke of genius; I make the case that it would be a high order debacle, thereby lessening the chance that it is an option that was seriously considered by the Chinese. Lastly, the idea that Chinese presence in the Indian Ocean amounts to a strategic or operational threat will be tested.

A. STRING OF PEARLS–CHINESE ENGAGEMENT BY COUNTRY

1. Pakistan:

From an economic perspective, the Gwadar port project is only as good as the infrastructure that connects it to markets within Pakistan and throughout the region. China pledged to not only fund the port's construction, but also to assist in building road, rail and pipeline links. Specifically, China envisioned an infrastructure corridor that would link Gwadar to Kashi in Xinjiang Province through the Karakoram Pass.[113] Such a link would allow the Chinese to bypass the northern Indian Ocean and shunt oil directly into China over land. Despite the attractiveness of the Gwadar-Kashi pipeline, the project

[113] Gurpreet S. Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," *Strategic Analysis* 32, no. 1 (2008): 9.

is in indefinite limbo due, in part, to the unstable internal security situation within Pakistan and to the technical challenges associated with routing a pipeline over the Himalayas.[114] China has also contributed $200 million USD to the construction of the Gwadar-Karachi highway.[115]

The Gwadar project is designed to diversify Pakistan's port infrastructure and provide an output for the natural resources contained in Balochistan and Central Asia at large. Gwadar is strategically located only 240 miles from the Straits of Hormuz. When complete the Gwadar port would be made up of 3 berths, an approach channel, turning basin and other supporting infrastructure. The Chinese have contributed vast sums to finance the Gwadar project.[116] Out of the $240 million required for Phase I of the project, the Chinese have financed $198 million.[117] In addition to financial assistance, the Chinese Harbor and Engineering Company has been the primary contractor providing construction, engineering and other technical support for the project.[118] Construction for Phase I began in 2002 and was completed in 2005. Construction of Phase II started in 2007 and is currently ongoing. Phase II will expand the port with the addition of 9 berths; 4 container berths and various terminals to handle bulk cargo, grain and oil. The estimated cost for Phase II is $840 million USD.[119] In 2007, the Government of Pakistan awarded PSA International, a Singaporean port operations firm, a 40 year contract to develop and manage the port.[120]

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[114] Ibid., 10. Not only would the pipeline have to pass through insurgency racked areas such as Baluchistan, the harsh climate in the Himalayas pose cast the feasibility of the pipeline in doubt. The problem of oil freeze during the winter and other technical issues would have to be overcome to make the project economically viable.

[115] Shee Poon Kim, "An Anatomy of China's 'String of Pearls' Strategy," *The Hikso Ronso* 2011, 24.

[116] Captain K. Raffat Zaheer, "Development and Operations of the Port of Gwadar," (International Federation of Shipmaster's Associations, 2006), 1–2.

[117] Kim, "An Anatomy of China's 'String of Pearls' Strategy," 24., Zaheer, "Development and Operations of the Port of Gwadar," 2.

[118] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 11.

[119] Zaheer, "Development and Operations of the Port of Gwadar," 2–3.

[120] Daniel J. Kostecka, "Places and Bases The Chinese Navy's Emerging Support Network in the Indian Ocean," *Naval War College Review* 64, no. 1 (2011): 70.

Chinese motives for backing the construction of Gwadar have been questioned by Indian security elite from the beginning. That China would provide such significant financial backing to a regional port project was viewed as a quid pro quo with Pakistan for future military use. Rumors of China being granted 'sovereign rights' to unimpeded access to the port, up to including military use, gained a great deal of traction within Indian and some Western security circles.[121]

2. Sri Lanka

The Hambantota Port is located on the southern end of Sri Lanka, approximately 6 nm from the major Indian Ocean east-west shipping route.[122] When complete, the port will consist of a harbor, cargo terminals, repair, bunkering and refueling facilities.[123] The total cost of the project is estimated to be $1.4 billion USD.[124] Phase I of the Hambantota port project cost approximately $360 million USD, 85% of which is funded by China. Construction of Phase I began in January, 2008 and was conducted by the China Harbor Engineering Company and Sino Hydro Corporation.[125] Phase I was completed in 2010. In 2012, China committed to provide $600 million USD to finance Phase II of the port project.[126] China Harbor Engineering Company has been awarded the contract for construction of Phase II.

The Sri Lankan government has not granted basing rights to China; the facilities being constructed at Hambantota are for civilian use.

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[121] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 7.

[122] Ibid., 14–15.

[123] Ibid.

[124] "Sri Lanka's Hambantota Port 'not deep enough'," http://www.bbc.co.uk/news/world-asia-15661917.

[125] "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 15.

[126] "China to provide U.S.$ 600 million to finance the phase II of the Hambantota port," News 360, http://www.news360.lk/economy/news-sri-lanka-23–08–2012-china-to-provide-us-600-million-to-finance-the-phase-ii-of-the-hambantota-port-7788654., "Rs. 100 b Chinese loans for Hambantota Port Phase 2," Daily FT, http://www.ft.lk/2012/08/24/rs-100-b-chinese-loans-for-hambantota-port-phase-2/.

3. Bangladesh

Chinese overtures to Bangladesh regarding access to port facilities and other transit infrastructure began in earnest after the turn of the century. Bangladesh has long enjoyed a close relationship with China. Over the years, China has provided Bangladesh with military hardware, economic assistance and technical support.[127] Chinese harbors ambitions to tie Bangladesh into the network of port, pipeline and road links that feed resources into the Asian giant. Indian elite concern is centered on Chinese funds allocated to upgrade the Chittagong port facility and to link it by road to Yunan province in China via Mynamar.[128] Rumors of Chinese designs on Chittagong have been in circulation since the 1990s.[129] The oft cited Energy Futures in Asia report noted that China sought access to certain facilities at Chittagong in the early 2000s.[130] Bangladesh currently has a naval base in the vicinity of Chittagong. Hydrography is a challenge at Chittagong; a long series of riverine channels must be negotiated to approach the port.[131] In 2010, Bangladesh struck a deal with China to finance a highway between Chittagong and Kuming, China via Mynamar.[132] In addition, China is providing funds to construct a deep sea port at Sondia.[133] Bangladesh is currently negotiating transit agreements with Nepal, Bhuthan and India to utilize Chittagong as a regional hub.[134]

4. Myanmar

China is reported to have been involved in the development of various ports and to have been granted rights to use naval and airport facilities on various islands as well as

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[127] Urvashi Aneja, "China-Bangladesh Relations: An Emerging Strategic Partnership?" (New Delhi: Institute of Peace and Conflict Studies, 2006), 4–6.

[128] Ibid., 7.

[129] Ibid. Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications", 14.

[130] Ibid. 9

[131] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 14.

[132] "China's Investment Spurs Bangladesh Development," Future Directions International, http://www.futuredirections.org.au/publications/indian-ocean/29-indian-ocean-swa/101-chinas-investment-spurs-bangladesh-development.html.http://www.futuredirections.org.au/publications/indian-ocean/29-indian-ocean-swa/101-chinas-investment-spurs-bangladesh-development.html

[133] Ibid

[134] Ibid

along the coast.[135] As early as 1991, naval facilities at Hianggyi and Akyab have been the subject of speculation as to the nature of Chinese involvement.[136] Most disturbing for Indian observers, the Chinese reportedly constructed a listening post on Great Coco island, a mere xx kilometers from the northernmost island in the Andaman and Nicobar chain. Sightings of Chinese military personnel on various Mynanmarese islands were rampant throughout the 1990s.[137] Many observers viewed Myanmar's position as geostrategic; an ocean outlet through Myanmar would allow resources (oil in particular) to flow into China without passing through the vulnerable waters of the Malacca Strait. The notion that China sought to build and expand port facilities in Myanmar gained the attention of Indian strategists.[138] The port at Sitwe is seen as an object of Chinese desire both as an input into Yunan province, but also as potential naval base. The Chinese are funding road links from Sitwe to Yunan province.[139] In addition, a project to build an oil pipeline from Sitwe to Yunan has also been initiated.[140] Since its inception in 1988, the Myanmar military regime has received significant economic and military support from China. Ironically, in 2008 India won the bid to upgrade port facilities at Sitwe for $800 million USD.[141]

5. Maldives

Reports in the Indian media indicated that discussions were held between China and the Maldives for naval basing rights. It was rumored in 1999 that the Chinese planned to build a submarine base on one of the outlying Maldivian islands. Chinese premier Zhu Rongji's visit in 2001 fuelled concern in India that a deal for China to

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[135] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 13.

[136] Roy-Chaudhury, *Sea Power & Indian Security*: 104–05.

[137] Ibid

[138] Khurana, "China-India Maritime Rivalry," 10–11.

[139] Kim, "An Anatomy of China's 'String of Pearls' Strategy," 24; Aneja, "China-Bangladesh Relations: An Emerging Strategic Partnership?."

[140] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 10. Kim, "An Anatomy of China's 'String of Pearls' Strategy," 24.

[141] V. Jayanth, "India to develop Sitwe port in Myanmar," The Hindu, http://www.hindu.com/2008/01/08/stories/2008010856191200.htm., Khurana, "China-India Maritime Rivalry," 2.

commit to a long term lease for a naval base was eminent.[142] In November, 2011 China opened a full embassy in the Maldivian capital, Male. It has offered economic aid in the form of infrastructure development. During the past decade, China assisted in building the Maldivian foreign ministry building in and has enabled cultural exchange. [143] There have been no agreements put forth to build Chinese military facilities on Maldivian territory

B. STRING OF PEARLS–ANALYSIS OF MILITARY FEASIBILITY

Maintenance of a network of naval bases in the Indian Ocean would require a significant military commitment on the part of China. To counter the threat of from Indian airstrikes and missiles pearl naval facilities would have to be hardened in addition to active countermeasures such as extensive antiaircraft defense systems.[144] China would have to deploy a non-trivial number of surface combatants not to be overwhelmingly overmatched by India's navy.[145]

The potential 'pearl' naval bases at Gwadar, Chittagong, Myanmar, Sri Lanka and the Maldives fall well within the range fans of the Agni III ballistic missile (Figure 6). With a ranges of 350 and 300 km respectively, the Privthi III ship to surface ballistic missile and the BrahMos PJ-10 cruise missile could effectively target 'pearl' bases from the sea.[146]

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[142] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 16.

[143] Ravi Velloor, "Big Power play as S. Asian leaders meet; China's diplomatic push into the Maldives sparks concern in India," *The Straits Times (Singapore)* 2011.

[144] Kostecka, "Places and Bases The Chinese Navy's Emerging Support Network in the Indian Ocean," 72.

[145] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 6.,

[146]The specifications of the BrahMos cruise missile are listed at the following sites: http://www.missilethreat.com/cruise/id.18/cruise_detail.asp, http://www.brahmos.com/content.php?id=10&sid=10

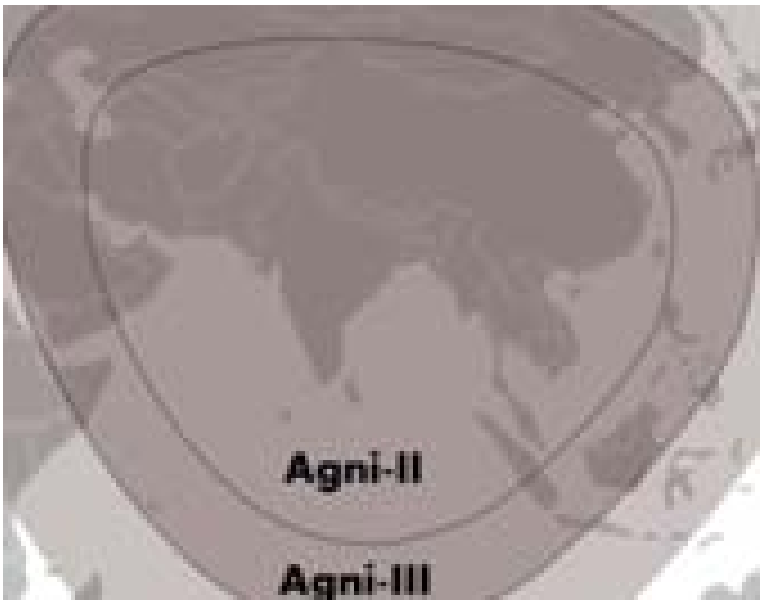

Figure 6. AGNI Missile Range Fans[147]

In addition to the threat posed by missile, air and naval assets several 'pearl' bases could be harried by the Indian army. The potential 'pearl' bases in Pakistan, Bangladesh and Myanmar could be successfully overran by the Indian army during a conflict. Indian army operations against Pakistan during the 1971 war provide a case study of the way that a decisive ground campaign launched from India can take large swathes of Bangladeshi territory in a relatively short amount of time. During a war the Indian army would not just be able to attack Chinese naval bases uncontested; the PLA attacking from the Himalayas along a variety of fronts along with the Pakistani army in the west and Kashmir would tie up a considerable amount of Indian combat power. Gwadar would be a likelier candidate to withstand an Indian offense due to its location deep within Pakistani territory. Additionally, the cohesion of Pakistan territory is bolstered by the state's nuclear backstop. It is unreasonable to assume, however, that during a two front war between against Pakistan and China any Chinese base in Pakistan would not be included on the nuclear strike list.

Chinese naval bases in Bangladesh, Myanmar, Pakistan and Sri Lanka would be within the reach of land based air attack from Indian territory (Figure 7). Indian Mirage

147 "AGNI Missile Range Map," Pakistan Defence, http://www.defence.pk/.

fighters based on the subcontinent could strike Hambantota, Gwadar and Chittagong bombers based in the Andaman islands imperil bases in Mynamar (Figure 8). Observers have noted that the geography of Gwadar makes it particularly vulnerable to airstrikes. Gwadar port is connected to the mainland by a thin peninsula that could be targeted during a bombing campaign in addition to port facilities. Indian territory would be the proverbial 'unsinkable aircraft carrier' from which the Indians could imperil the viability of Chinese naval bases.

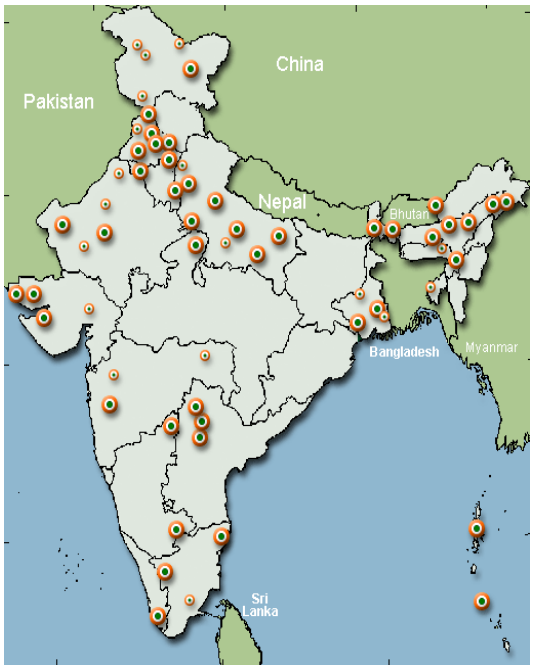

Figure 7. Indian Air Bases[148]

148 "Indian Air Bases," Pakistan Defence, http://www.defence.pk/.

Figure 8. Indian Air Force Range[149]

Not unlike any military component, the effectiveness of naval power is greatly reduced if naval bases are within range of an adversary's air or missile forces. During World War II, German surface naval combatants that were based in north Germany rarely left port due to British naval superiority and were constantly stymied along the docks by Allied bombers. Pakistani surface combatants were forced back into Karachi harbor in the early hours of the 1971 war where they would remain for the duration of the conflict.

Chinese submarines based out of any of the 'pearls' pose the most serious threat India. However, fixing the location of Chinese submarines by basing them at one of the 'pearls' increase the likelihood that they could be successfully tracked by the Indian military. Any Chinese submarine leaving a 'pearl' base could be surveilled and tracked by Indian assets. Chinese fast attack nuclear submarines operating from the western Pacific could conceivably have a greater impact in the Indian Ocean because their departure, route and location would be more difficult to track than submarines that operate from one of the 'pearl' bases.

[149] Map graphics derived from "Geography Maps," About.com, http://geography.about.com/. Range shading based on the maximum range of the Su-30MKI and Mirage 2000

C. THREAT PERCEPTION ANALYSIS–CHINESE PRESENCE IN THE NIOA

The preceding examination of the actual activities that the Chinese have engaged in throughout the NIOA show that the String of Pearls are primarily economic in nature. It cannot be discounted, however, that these activities were viewed with suspicion by the Indian security elite. Moreover, the activities originating from a strategic rival may have been perceived as a long term threat. In order to evaluate this possibility, the factors that work together to cause a set of events or actions taken by another state to be classified as threatening by observers must be examined. Scholars who have written about the nature of strategic threat have posited several factors that describe when a series of events will trigger negative threat perception. In what follows, I have synthesized eight factors from the literature to examine if the String of Pearls can be reasonably perceived as a threat by the Indian security elite. These factors are Geography, Atmosphere of Tension, Observer's Sense of Vulnerability, Presence of Democratic Norms in International Relations, Meaning of History, Violation of Rules, Offensive Capability, Offensive Intent.[150]

1. Geography

The hyperbolic commentary on the String of Pearls would lead one to believe that construction of Chinese naval bases in the NIOA was well underway. However, as it was shown in the last section, there are no Chinese naval bases being built, and none of the nations thought to be potential pearls has shown a serious inclination to take such a step. The PLA(N) ships pass through the NIOA making port calls, and have on one occasion, conducted a training exercise with Pakistan. The intelligence, reconnaissance and surveillance (ISR) activities conducted by Chinese submarines cannot be accurately gauged however, this activity is not unusual due to the fact that nations collect information on each other, even allies. It is clear that Chinese naval activity is transitory

[150] These factors were derived from the following sources: Raymond Cohen, "Threat Perception in International Crisis," *Political Science Quarterly* 93, no. 1 (1978)., J. David Singer, "Threat-Perception and the Armament-Tension Dilemma," *The Journal of Conflict Resolution* 2, no. 1 (1958)., Robert Jervis, *Perception and Misperception in International Politics* (Princeton Princeton University Press, 1976); Farnham, "Roosevelt and the Munich Crisis: Insights from Prospect Theory."

and can easily fall within the right of nations to use the seas a means of transit. The proximate threat to India posed by China still rests with the PLA divisions that sit across the northern border.

2. Atmosphere of Tension

India and China have shared a militarized land border since the end of the 1962 Sino-Indian War. Policymakers in both India and China have rhetorically upheld the notion that the two powers are rising peacefully together and do not harbor a desire to impose their will militarily upon one another. With the exception of a brief period of diplomatic contention following India's nuclear tests in 1998, there has not been a major political or military crisis between China and India for more than two decades. This bump in the otherwise steady state of Sino-Indian relations since 1990 is important in the context that this period is the time where naval strategy was being evaluated. While the row over Vajpayee letter was not a naval issue, any degradation in the overall Sino-Indian relationship could have contributed to an atmosphere of tension and impacted policymaker's negative threat perception of China.

On the maritime front, unlike in the contested waters surrounding the Senkaku Islands or in the Taiwan Straits or South China Sea, the Indian and Chinese navies have not been deployed as a means to gain leverage over a mutual territorial claim. The PLA(N) conducted amphibious assault exercises on islands in the Taiwan Strait in 1995. In addition, Chinese naval vessels regularly patrol and assist in maintaining facilities on various coral islands in the South China Sea to bolster its claims over an extensive Exclusive Economic Zone in the region. These sort of naval operations have often set the stage for face offs between the Chinese navy and the Japanese, Taiwanese, Philippine and Indonesian navies and others in Southeast Asia. India and China do not have any contested maritime boundaries or territories. The row over Prime Minister Vajpayee's letter naming China as India's main threat did not create a crisis that saw a break in diplomatic relations or a major change in military posture on the border.

In fact, there was significant progress made in the 1990s and early 21st century to alleviate the issues surrounding the border dispute. A series of military confidence

building measures along the border in the 1990s culminated in an agreement in 2002 to establish a updated framework for border negotiations. At the turn of the century, the contours of the border dispute tilted toward cooperation and away from tension. Overall, despite the realities of their militarized land border, there was not an overall atmosphere of tension that would not have been a factor that contributed significantly to policymakers threat perception

3. Observer's Sense of Vulnerability

The Chinese navy at the turn of the century did not have the ability to project power into the Indian Ocean or conduct sustained maritime operations far from its shores. From a purely maritime perspective, Chinese naval power was not a clear and present danger to the Indian navy. In a general sense, scholars have noted that Indian policymakers have viewed China's rise with a degree of unease. Gardner catalogued the asymmetric perception that Indian policymakers hold regarding the Sino-Indian security relationship.[151] Indian military and security documents and journals are more likely to cite China as a significant security challenge than those generated in China. From a military perspective, China's modernization has outpaced India's by a significant margin. On average, Chinese annual military spending has been 1.6 times that of India on average since 1990.[152] The Chinese military is more than 2.25 million compared to India's 1.32 million. The Chinese navy is 255,000 strong compared to Indian naval strength of 53,000.[153] There is concern in New Delhi about the security implications of China's rise. China's average Gross Domestic Product (GDP) growth since 1980 has been approximately 10%[154] per year; China's GDP in 2011 was $7.3 trillion USD, India's

[151] J. W. Garver, "Asymmetrical Indian and Chinese threat perceptions," *Journal of Strategic Studies* 25, no. 4 (2002): 109–10.

[152] "SIPRI Military Expenditure Database ," Stockholm Internation Peace Institute, http://www.sipri.org/research/armaments/milex/milex_database.

[153] Jane's

[154] Charles Riley, "China's GDP growth slides to 7.4%," CNN Money, http://money.cnn.com/2012/10/17/news/economy/china-gdp/index.html.

GDP in 2011 was $1.8 trillion USD.[155] The Indian economy has not been able to generate the revenue required to match Chinese military spending potential.

4. Presence of Democratic Norms in International Relations

Farnham has posited that adherence to democratic norms play a role in the threat perception calculations of elites in democratic states when evaluating the actions taken by non-democratic states. Security elites in democratic states view violation of process norms such as negotiation as potentially threatening signals.[156] Violation of conflict resolution norms by non-democratic states portend ill intent by convincing elites that non-democratic states would rather solve geopolitical disputes through military force or coercion. In the case of China and India the role of democratic norms may factor into Indian threat perception. The secretive decision making process employed by the ruling Chinese Communist Party make discerning intent behind long term naval strategy a challenge for outsiders. With respect to conflict resolution, Chinese actions to gain leverage over other states involved in maritime boundary disputes show a willingness to employ naval power to further its aims. While not the dominant dynamic driving Sino-Indian relations, China's to not adhere to international relations norms that are valued by democratic states contribute to negative threat perception by Indian security elites.

5. Meaning of History

The lessons learned from history shape decision makers ability to process current events and categorize actions as threatening or non-threatening.[157] It was previously mentioned that China once possessed the naval power to dominate the waters of the western Pacific, but also those of South Asia. In this context, Chinese naval modernization and growth would have been viewed by Indian security elites as a precursor for reestablishing a tributary system between China and the littoral nations of Asia. In addition, India policymakers have not forgotten that European colonialism was imposed upon India from the sea by maritime powers Portugal and Great Britain. This

[155] World Bank

[156] Farnham, "Roosevelt and the Munich Crisis: Insights from Prospect Theory," 402.

[157] Cohen, "Threat Perception in International Crisis," 95.

history makes Indian elites sensitive to an asymmetric growth of naval power in the Indian Ocean led by extra regional powers. Colonial European navies were able to brush aside antiquated, disorganized Indian naval forces in the 17th century thereby enabling the subsequent subjugation of the subcontinent. These experiences serve as a factor in Indian sensitivity to increasing naval presence in the Indian Ocean region by extra regional powers and factor into threat perceptions.

6. Violation of Rules

A state's willingness to violate international rules is cited by Cohen as one of the strongest preconditions to being perceived as a potential threat by others in the international system. Cohen defines rules broadly to include: international law, international agreements, bi-lateral pacts, spheres of influences and unwritten or tacit agreements.[158] In the case of maritime threat perception, I argued in a previous chapter that India views the Northern Indian Ocean Area as a sphere of influence. The notion that regional powers designate areas on their periphery to serve as security buffer zones or places to exercise primary political influence is not new; Cohen characterizes spheres of influence as part of what make up unwritten rules that states will take action to uphold. Violation of a state's unwritten rules can be characterized as a threat. As I have noted earlier, the location of the possible 'pearl' bases fall squarely within the area in which India considers its sphere of maritime influence. The establishment of Chinese naval bases in the NIOA would be a violation of India's sphere of influence. Cohen argues that rules violations are the primary determinant of threatening intent.

7. Offensive Capability

China has been modernizing its military since the early 1990s. At the turn of the century a comparison of Chinese to Indian destroyer and frigate numbers illustrate a part of the overall 'ship gap' between the two countries. In the year 2000, the PLA(N) had

[158] Ibid., 103.

45 destroyers and frigates in service compared to India's 19.[159] China also possesses a submarine force that dwarfed India's almost 4 to 1.[160] India possessed an operational aircraft carrier at the turn of century while China did not. However, the size disparity of the surface combatant force places the naval offensive capability advantage at the turn of the century on the side of China. Additionally, Chinese naval modernization was projected to maintain the overall PLA(N) advantage over the Indian navy.[161] The measure of offensive capability is probably the least useful dimension of threat assessment in this case given that at the turn of the century there were several navies that had an advantage in terms of offensive capability over India, including but not limited to the U.S., Britain, France, Italy and Japan. No serious analyst at the turn of the century would have suggested that these navies posed a threat to India. The more telling measure of threat is offensive intent. Of course an adversary can harbor offensive intent, but if it does not have to capability to act on the threat, then intent is of no consequence.

8. Offensive Intent

The Chinese navy reformulated its naval doctrine in the mid-1980s. The former commander of the PLA(N), Admiral Liu Huaqing, is associated with a the 'offshore defense' naval doctrine and a development plan that would upgrade the Chinese navy to blue water status by 2040.[162] Reports attributed to the Chinese Central Military Commission's General Logistics Department called for increased naval visits to the Indian Ocean.[163] It is clear from these sources that Chinese intended to increase the size and reach of its navy in the 21st century. However, there is little to suggest that Chinese naval modernization is focused on neutralizing India or controlling the Indian Ocean.

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[159] Numbers for Chinese ships approximated using data from Jane's "World Navies: China" https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1322663, Hiranandani, *Transition to Eminence The Indian Navy 1976–1990*: 270.

[160] Most of China' submarines are short range diesel subs designed for coastal defense. This is also the case with India's submarine force.

[161] Pehrson, "String of Pearls: Meeting the Challenge of China's Rising Power Across the Asian Littoral," 13.

[162] Ashok Sawhney, "Indian Naval Effectives for National Growth" (Singapore: S. Rajaratnam School of International Studies, 2010), 10.

[163] Khurana, "China's 'String of Pearls' in the Indian Ocean and Its Security Implications," 2.

China has never stated a desire to construct a global network of military bases nor has it ever based military forces in foreign lands.[164] The Chinese navy capabilities are tailored to counter a navy such as the U.S. navy which relies on aircraft carriers and other surface vessels to project power.[165] Chinese naval activity and strategy is focused on dealing with challenges in the western Pacific.[166] Specifically, China is dealing with several maritime territorial disputes such as claims over Taiwan, the Senkaku Islands and its claim on an extensive EEZ in the South China Sea. Concern over Indian Ocean SLOCs is on China's agenda, however, from a military standpoint these concerns rank below western Pacific issues. China has never expressed a definite intent to conduct or prepare to conduct offensive operations in the Indian Ocean or its littorals. The idea that China's strategic relationship with Pakistan would bring it into a shooting war on with Pakistan against India is not supported by history. China did not intervene military to assist Pakistan in any of the three wars that it fought against India after it established a strategic partnership with China in the early 1960s. The strategic environment has not changed to suggest that China would intervene in a future Indian-Pakistan conflict. Even if such an intervention were to happen it would more likely occur by land into contested territory adjacent to the Himalayas.

An analysis of factors that determine threat perception would suggest that the INSE may have considered the String of Pearls phenomenon as a threat. The Observer's Sense of Vulnerability, Meaning of History, Violation of Rules and Offensive Capability would have been the primary drivers of threat perception. Scholars have theorized about the link between events at the international level (such as a military threat) and the resulting adaptation of military doctrine. Others have argued that civil military relations and the structure of military institutions will determine the doctrinal response to changes in the international system. The commonality between these theories rests in the role that civilian leadership plays in doctrine development. Cohen suggests that international

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[164] Kostecka, "Places and Bases The Chinese Navy's Emerging Support Network in the Indian Ocean," 59–60.

[165] Jane's World Navies: China

[166] Chew, "Crouching Tiger, Hidden Dragon: The Indian Ocean and the Maritime Balance of Power in Historical Perspective," 5.

crises focuses the minds of the civilian leadership and that military leaders will present solutions to the in the form of new doctrine to get in step with leadership or because of pressure from leadership. argues that doctrinal change in response to an international crisis depends instead on the nature of the military institution and the command relationship between civilian and military. Both scholars agree that it is impossible to predetermine the type of doctrine that will result; Cohen suggests that there is a bias toward the drafting of offensive doctrine.[167]

9. Indian Threat Perception Outcome and Impact

A geostrategic threat will cause states to change strategic course possibly altering military doctrine. It is unclear, however what military avenues states will pursue to counter a threat. Will they respond with offensive or defensive doctrine? Will they innovate or attempt to optimize existing doctrine? . For example, after World War II the Soviet Union faced a maritime threat from the U.S. navy. The U.S. navy was a blue water force organized around the aircraft carrier task force. An analyst in 1950 would be hard pressed to predict which naval strategy and doctrine the Soviets would adopt relying only on Soviet threat perception verification. Prior to World War I, the security elite around the world were influenced by Alfred Thayer Mahan's writings and supported the construction of blue water navies. Britain, France, Germany, Russia and Japan all invested significant resources into naval development and construction in the years leading up to World War I. Each navy posed a threat to the others, however states responded in basically the same way; by building a bigger stronger blue water navy. Knowledge of threat does not allow one to predict the military response of other actors in the system.

[167] Such a characterization is army centric and does not quite fit into naval strategy considerations. The distinction between naval strategies, for instance blue water versus green water, lies more in the role, reach and scope of naval operations. For example, throughout the 1990s, a concept known as Maneuver Warfare lies at the heart of United States Marine Corps doctrine. Maneuver Warfare calls for identification and attack of the enemy's center of gravity through exploitation of critical vulnerabilities. The enemy's will to fight and his military system will be broken down due to superior operational tempo, speed and attack of defensive gaps. Maneuver Warfare is a clear example of an offensive doctrine. On the other hand, naval doctrines such as the Indian Maritime Doctrine speak more of roles and missions that can be offensive if necessary however encompass a wide variety of other tasks.

If the String of Pearls is perceived to be a maritime threat, then is it a given that a blue water naval strategy would be adopted as a counter? What about an anti-access, area denial strategy? Is it possible that power would be shifted to the Indian air force to develop long range bombing capability to reduce possible pearl bases? Of the four naval strategy options that were being considered by naval leadership at the turn of the century, how would knowing Indian threat perceptions assist in predicting which option would be selected? Verification of Indian elite threat perceptions alone is not sufficient to deduce why a blue water naval doctrine was adopted over other alternatives

D. CONCLUSION

Evidence was presented in this chapter to show that the "String of Pearls" is primarily a scheme to increase Chinese influence in south Asia through the financing of infrastructure projects. The "String of Pearls" is not a Chinese military expansion project. From a military standpoint, Chinese naval bases located so close to India would require a significant commitment to maintain and would be highly vulnerable to attack and isolation. These facts support the notion that Indian unease about the nature of Chinese activities in the NIOA is not entirely rational. While there is evidence to suggest that the INSE would have viewed Chinese activity in the NIOA as a threat, these facts do not lead to a clear understanding about the development of a blue water naval doctrine as a response. If the Chinese activity is modeled as a loss of influence rather than a threat, Prospect Theory provides a means to explain why the security establishment embraced a blue water doctrine.

V. PROSPECT THEORY ANALYSIS OF INDIAN NAVAL STRATEGY

Prospect Theory provides a model to explain not only why the 'String of Pearls' phenomenon would spark a reaction in the INSE but also would allow an analyst to reasonably predict a military doctrinal response if the strategic options under consideration are known. Unlike threat analysis, Prospect Theory provides a clearer link between a change in the geostrategic environment and the policies that states implement to adapt. Information will be presented in this chapter will illuminate how the INSE through the mechanism of a shared reference point collectively viewed Chinese presence in the NIOA as a loss and were thereby more willing to endorse the growth of the Indian navy and the adoption of a blue water naval doctrine as countermeasures. The blue water doctrine was the riskiest choice out of a set of four alternative strategies. The INSE sought to reestablish the status quo of Indian maritime dominance of the NIOA through implementation of the *Indian Maritime Doctrine*. As I have shown in Chapter IV, Indian maritime dominance in the NIOA has never been seriously challenged by Chinese activity. Applying Prospect Theory to this problem explains INSE misperception of Chinese intent as well as the resulting policy outcome.

A. PROSPECT THEORY

One of the main hypotheses that arise from Prospect Theory is that people are willing to take risks in order to reestablish a recently lost position. Correspondingly, people tend to be more sensitive to losses than to gains. The frame of reference ("status quo") that people seek to maintain will be guarded and any change in position from the status quo that is considered a loss will be met with efforts to regain lost ground.

Each option in a choice set evaluated under expected utility can be expressed mathematically as: EV = p * u where EV is the expected value, u is the subjective utility of the option and p is the probability of occurrence. Prospect theory is described algebraically as V = w(p)*v(x).[168] In this relationship V is the value of a prospect, v(x)

[168] Haas, "Prospect Theory and the Cuban Missile Crisis," 247.

is the value function and w(p) is the probability weighting function.[169] Each value for p corresponds to an outcome value x. The value function describes what has experimentally been shown to be the salient features of Prospect Theory. Namely, the value function describes how people code utility not in absolute terms but as positive or negative in relation to a reference point. The value function curve is convex in the negative "losses" region and concave in the positive "gains" region. The "S" shape of the curve describes experimental findings. In the domain of losses, utility decreases at an increasing rate and increases at a decreasing rate in the domain of gains (Figure 9). People express an aversion to losses while cautiously pursuing additional gains. The value function is also produces results which are steeper for losses than for gains.[170] Losses hurt worse from a psychological standpoint than gains feel good.

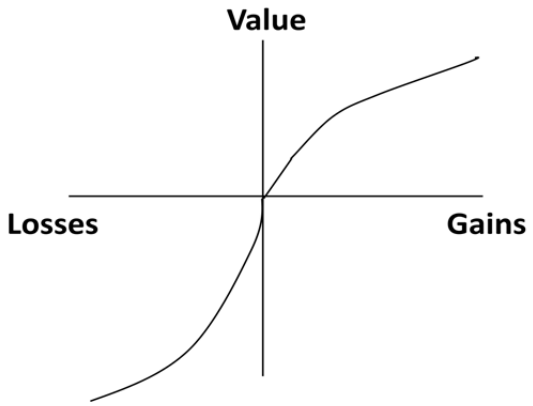

Figure 9. Prospect Value Graph (From Jervis, 1992)

Additionally, the probability function w(p) is also non-linear and has a larger variance near probability values of 0 and 1. The probability weighting function is an expression of the tendency for people to underweight medium to high probabilities and

[169] J. S. Levy, "An Introduction to Prospect Theory," *Political Psychology* 13, no. 2 (1992): 181.

[170] Ibid. McDermott, *Risk Taking in International Politics Propect Theory in American Foreign Policy*: 28.

overweight low probabilities.[171] That is, the probability that an option under consideration will cause greater losses will be discounted even if the probability of the option failing is high.[172] It is notable that probabilities approaching certainty (p=1) cause Prospect Theory to produce outcomes that are identical to those produced under expected utility.[173]

An illustration of these phenomena can be seen in the results of experiments conducted by Kahneman & Tversky**.** Eighty percent of survey respondents preferred to have a guaranteed $3000 to an 80% chance of gaining $4000 dollars. In this example, the status quo position of possessing $3000 is the preferred choice of respondents despite the potential for gains. In a second experiment, 92% of respondents would risk an 80% chance of losing $4000 dollars and a 20% chance of losing nothing instead of taking a guaranteed loss of $3000. This case illustrates the propensity of individuals to risk a greater loss in the face of a guaranteed smaller loss.

An example of applying Prospect Theory to explain international conflict was is the case of the 1973 Arab-Israeli War. The Egyptians attacked Israel to regain territory lost in the Sinai Peninsula in 1967. The loss of the Sinai was viewed as wholly unacceptable by Egyptian elites resulting in a risky strategy to conduct military operations against a militarily superior Israel that had decisively defeated Arab armies in 1956 and 67.[174]

In this study, the crisis examined is Chinese presence in the Indian Ocean, the independent variable is domain and the dependent variable is risk propensity.[175] The

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[171] *Risk Taking in International Politics Propect Theory in American Foreign Policy*: 31. Experimental results suggest that the 'tipping point' from overweighting to underweighting is somewhere in the .10-.15 range of probabilities.

[172] Ibid., 29.

[173] Haas, "Prospect Theory and the Cuban Missile Crisis," 249.

[174] Levy, "Applications of prospect theory to political science."

[175] McDermott, *Risk Taking in International Politics Propect Theory in American Foreign Policy*: 10.

critical steps of analysis are establishing a reference point and domain.[176] The focus of analysis is the decision making process and how the outcome was shaped by the editing of strategy options.

The utilization of Prospect Theory to explain the change in post 20th century naval strategy requires the identification of a reference point that is shared by the elite. This point will then be used to illustrate the perception of losses that result from growing Chinese presence in the NIOA.

B. INDIAN NATIONAL SECURITY ELITE REFERENCE POINT

The attitude of INSE toward India's role in South Asia is encapsulated in a quote from recent report written by several prominent INSE. To the INSE in South Asia: "India is the major power in the region."[177] This viewpoint has been derived from several streams of Indian history and politics. In what follows I will establish that the INSE reference point is Indian economic, political and military dominance in South Asia.

Jawaharlal Nehru has arguably had the greatest impact on modern Indian security thought. As the first Prime Minister of the independent Republic of India Nehru possessed an enormous amount of political capital and was able to fundamentally shape Indian foreign policy and security institutions. His 18-year tenure as Prime Minister afforded Nehru the opportunity to impress his notions of the role of India in South Asia unto the Indian national security community. Nehru was a sophisticated figure who had extensive knowledge of and interest in history and foreign affairs. Nehru began to shape the foreign policy of India prior to independence.[178] The idea that India is a special state whose role in charting the course of South Asian peoples permeates Nehru's writings and policies. Nehru believed that India's role in South Asia is exclusive and historic. In

[176] McDermott notes that Prospect Theory allows for a prediction of risk propensity to be made with knowledge of domain.

[177] Sunil Khilnani et al and Lt. Gen. (Retd.) Prakash Menon, "NONALIGNMENT 2.0 A FOREIGN AND STRATEGIC POLICY FOR INDIA IN THE TWENTY FIRST CENTURY," (New Delhi: Center for Policy Research, 2012).

[178] Michael Edwardes, *Nehru A Political Biography* (New York and Washington: Praeger, 1971). 192–193

addition to shaping the view of the INSE in general, Nehru was instrumental in setting the foreign policy positions of the Indian National Congress Party.

One of Nehru's bedrock beliefs was that the Indian civilization encompassed the entire subcontinent and that the Republic of India was the legitimate inheritor of Indian culture and history.

> The diversity of India is tremendous; it is obvious; it lies on the surface and anybody can see it. It concerns itself with the physical appearance as well as certain attitudes and traits. There is little in common, outward seeming, between the Pathan in the North-West and the Tamil in the far South. Their racial stocks are not the same even though there may be common strands running through them; they differ in face and figure, food and clothing, and of course, language. In the North West there is already the breath of Central Asia and many a custom there, as in Kashmir, reminds one of the countries on the other side of the Himalayas. Pathan popular dances are singularly like Russian Cossack dancing. Yet, with all these differences, there is no mistaking the impress of India on the Pathan as this is obvious on the Tamil.[179]

The partition of the British Raj into India and Pakistan was viewed by Nehru as a political expediency to hasten the departure of the British. Nehru viewed India's right to determine the political destiny of the subcontinent as being unaffected by partition.[180]

In addition his historic views, Nehru sought to place India at the center of various international organizations and movements. While some of these efforts were not exclusively focused on South Asia, they illustrate Nehru's view of India as a regional power. In 1947, Nehru initiated the Asian Federation, an organization that was comprised of nations that bordered the Indian Ocean.[181] During the 1950s, Nehru crafted the non-alignment strategy in which he advocated foreign policy course that did not place India under the sphere of influence of either the United States or the Soviet Union. This

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[179] Jawaharal Nehru, *The Discovery of India* (Bombay: Asia Publishing House, 1961). p. 61.

[180] Edwardes, *Nehru A Political Biography*. p. 196

[181] This organization was short lived and did not survive past 1947. Ibid.

strategy morphed into an international movement in the early 1960s as leaders of other states (mainly former European colonies) embraced non-alignment as a feasible foreign policy. [182]

Himalayan states such as Nepal, Sikkim[183] and Bhutan were seen as frontier buffer regions useful mainly for placing distance between China and India. Nehru considered these states as nominally independent whose autonomy extended mostly to internal affairs. The execution foreign policy and defense for these states was to be the India's responsibility as regional power. In the case of Nepal, India wielded significant influence over its foreign affairs throughout the 1950s. In 1960, India deployed troops along the Nepalese border with China in response to a Chinese border incursion. As a result of this hegemonic behavior, Nepal began to assert its sovereignty over foreign polices and distance itself from India beginning in the 1960s.[184] Even though the level of influence India has over the Himalayan states has waned somewhat since Nehru's time, the perception that India a significant voice in the foreign affairs of these nations has remained in the INSE.

After the brief interregnum Prime Ministerships of Gulzarilal Nanda and Lal Bahadur Shastri**,** Indira Gandhi rose to lead the Indian government. Her tenure as Prime Minster was also significant in cementing the view amongst the INSE that India is the natural hegemon in South Asia. With the exception of a three-year period from 1977–1980, Gandhi's term spanned 15 years. Gandhi reaffirmed Nehru's non-alignment stance with an emphasis on India's strategic flexibility: "The principles which have guided our foreign policy are in keeping with the best traditions of our country, and are wholly consistent with our national interest, honor and dignity. They continue to remain valid."[185]

Her policies toward other South Asian nations were a manifestation of Gandhi's perception of India as South Asia's preeminent regional power. The 1971 Indo-Pakistan

[182] Ibid.pp 264–67

[183] Sikkim joined the Indian Union in 1975.

[184] *India Foreign Policy The Indira Ghandi Years*, (India: Radiant Publishers, 1990). pp 164–166

[185] Ibid. p. 47

War simultaneously humbled Pakistan and gave birth to Bangladesh. The small Himalayan state of Sikkim voted to join India following an Indian military intervention to support the ruling regime.

As an alternative to the Nehru-Gandhi foreign policy school, the Hindu nationalists were able to influence Indian strategy beginning in the 1980s. Despite significant differences on domestic policies, Hindu nationalists and Congress Party politicians share the view that India is and should be the dominant power in South Asia. To Hindu nationalists, Bharatmata (Divine Mother India) is a land that includes the whole subcontinent (Figure 10).[186] The logo of the flagship Hindu nationalist organization, Rashtriya Sayamsevak Sangh depicts this viewpoint:

Figure 10. Mother India[187]

In his influential book, Hindutva, Hindu nationalist scion, V.D. Sarvarkar wrote:

> At last the great mission which the Sindhus had undertaken of founding a nation and a country, found and reached its geographical limit when the valorous Prince of Ayodhya made a triumphant entry in Ceylon and actually brought the whole land from the Himalayas to the Seas under one sovereign sway.[188]

[186] Paola Bacchetta, "Sacred Space in Conflict in India: The Babri Masjid Affair," *Growth and Change* 31, no. 2 (2000).

[187] "Mother India Graphic," Rashtriya Swayamsevak Sangh, http://www.rss.org/.

[188] V. D. Savarkar, *Essentials of Hindutva* (Andamans1922).

Hindu nationalist influence on Indian politics grew steadily throughout the 1980s and culminated in the formation of governments led by the Bharatiya Janata Party beginning in late 1990s.

The INSE have a shared view that India South Asia's regional power and that all strategic gains or losses are viewed from this reference point.

C. THE INDIAN NATIONAL SECURITY ELITE IN THE DOMAIN OF LOSSES

China's engagement in South Asia during the 21st century has been perceived as threatening by the INSE. Chinese economic and military aid to South Asian states has been viewed by the INSE through a zero sum lens; Chinese gains in the region lead to Indian losses. A perceived decline from the INSE reference point of Indian dominance of South Asia would place the INSE into the psychological "domain of losses."

1. The Domain of Losses, the Media and Indian Think Tanks

Since 2005, there have been 58 articles in major world newspapers that mention the "String of Pearls" strategy as it relates to China and India. The Indian Defense Review published 19 articles about the "String of Pearls" strategy since 2005. In addition to media outlets, major Indian think tanks such as the Center for Policy Research (CPR) and the Institute for Defense Analysis (IDA) have written extensively on the implications of Chinese engagement in South Asia. From 2007 through 2011 there were 89 articles in IDA's flagship journal Strategic Analysis that contained the phrase "String of Pearls Strategy." In 2012, CPR published Non-Alignment 2.0 as a working paper to inject energy into the Indian strategic dialog. The following quote from this document highlights how India "lagged behind" China in the contest for influence in South Asia:

> This situation has been further complicated by the fact that South Asia is a region where other great powers, particularly China, are trying to expand their influence...The only way to counter Chinese economic engagement is to have a credible engagement plan of our own. But most importantly India has lagged behind because of its inability to follow

Professor Brahma Chellaney, a prominent CPR analyst, succinctly summarized the dread that the INSE feel when they consider the possibility of India being choked by

a "String of Pearls": "What if India were to do what China is doing in its periphery—develop a web of partnerships around it? How would China react? We need to be objective here."

What follows is a series of quotes from the INSE or other South Asian security figures which illustrate that 21st century Chinese engagement in South Asia has caused the INSE to believe that they are losing influence to China.

a. The Domain of Losses Depicted

Indian National Security Advisor M. K. Narayanan characterized China's growing South Asian influence in the following manner:

> For India, China's inroads into countries on its periphery are disconcerting, to say the least..... China has developed key interests in Sri Lanka, including helping Sri Lanka to build a major port at Hambanatota..... China is actively wooing Nepal and the Maldives. It is extremely keen to establish a fraternal relationship with Bhutan.[189]

Indian Navy Chief Admiral Sureesh Metha asserted that the Chinese funded Gwarder Port would have serious strategic implications for India."[190]

With respect to Chinese South Asian influence Admiral Metha stated that: "On the military front, our strategy to deal with China must include reducing the military gap and countering the growing Chinese footprint in the Indian Ocean Region."[191]

Former Indian Foreign Secretary and current National Security Advisor Shiv Shankar Menon characterized the 'String of Pearls' strategy as an "ineffective murder weapon." While dismissive of the notion that Chinese inroads into South Asia is

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[189] M K Narayanan, "'China emerging as a naval entity cannot be ignored'," *Business Standard* 2012.

[190] "India Alarmed As Chinese Built Gwadar Port Of Pakistan Becomes Operational

," Countercurrent.org, http://www.countercurrents.org/ghazali080208.htm.http://www.countercurrents.org/ghazali080208.htm

[191] Sureesh Mehta, "India's National Security Challenges," Outlook India.Com, http://www.outlookindia.com/article.aspx?261738.

part of a plan to militarily isolate India, he inexplicitly acknowledges in that Chinese influence has vis a vis India has increased.[192]

Defense Secretary A. K. Antony's view on China's growing influence in South Asia:

> Today, the security situation in our immediate neighborhood has become really complex,.. On the one hand, there are some political developments, and on the other hand, a number of other factors are a cause for worry and need to be factored into our preparations, both in the short term and long term.[193]

2. Recognition of Lost Relative Indian Influence by South Asian Security Elite

The security elite throughout South Asia recognize that their nations engagement with China could be perceived as a loss in influence by the Indians. The following quotes illustrate that foreign officials recognize that the Indians perceive they are losing influence to China.

During a visit in 2009, Bangladeshi Chief of Army Staff General Mohammed Abdul Mubeen stated that Chinese engagement was "not strategic" and would not affect Bangladeshi-Indian ties.[194]

Sri Lankan officials made a strenuous effort to assure a visiting Indian delegation that Chinese engagement would not lead damage India's influence:

> We would certainly not allow one country to use Sri Lanka as a launching pad for hostile action against any other country. That is the universal principle and we accept that. There is no way that we will allow any country to use Sri Lankan soil or waters to take hostile action against any other country,....So there is no hostility or competition. Both are our

[192] Shivshakar Menon, "No Chinese Military Bases in the Indian Ocean," Rediff, http://news.rediff.com/report/2009/sep/11/no-chinese-military-bases-in-indian-ocean-shivshankar-menon.htm.

[193]

[194] "Ties with China not strategic: Bangladeshi army chief," The Times of India, http://articles.timesofindia.indiatimes.com/2011–11–30/india/30458014_1_chittagong-staff-talks-general-mohammed-abdul-mubeen.

> friends. There is no reason for fears or suspicions. These are commercial relations ...no question of China encircling[195]

Maldivian Foreign Minister Ahmed Nassem bolsters Indian perceptions in the following manner:

> We have a simple solution on the India-China rivalry. We never do anything in secrecy. We keep the Indians informed of what we are planning with China before anyone tells them anything in private.[196]

D. INDIAN NAVY STRATEGIC / DOCTRINAL OPTIONS

Now that the reference point has been established for the INSE and evidence has been presented that their perception of Chinese presence places them in the domain of losses, it is now appropriate to detail the editing process for each strategic option.

1. Option 1–Coastal Defense / Deterrent Navy

The Indian navy began with coastal defense and deterrence as its main objective. The navy's missions and objectives quickly grew beyond this role in the 1950s and 1960s as security competition with Pakistan increased[197]. The advent of the Indian coast guard has removed many of the missions that would be necessary for a coastal defense force from the navy's portfolio. There is little evidence to suggest that this option was seriously considered by Indian policymakers.[198]

2. Option 2–Sea Denial

Sea denial is a naval strategy that is designed to counter the threat posed by navies that have an advantage in surface combatants and a doctrine that emphasizes sea

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[195] "Won't Allow Us to Be Used as Launching Pad for Hostile Actions'," *Pravasi Today*, http://www.pravasitoday.com/wont-allow-us-to-be-used-as-launching-pad-for-hostile-actions.htm

[196] Velloor, "Big Power play as S. Asian leaders meet; China's diplomatic push into the Maldives sparks concern in India."

[197] Tellis, "The Naval Balance in the Indian Subcontinent," 1189–90.

[198] The early policy decisions made in the Indian naval establishment moved the navy beyond a coastal defense role. The idea of sea control promulgated by Panikkar and other strategists influenced early policy choices. Scott, "India's "Grand Strategy" for the Indian Ocean Mahanian Visions," 101–02., Dasgupta, *Arming Without Aiming India's Military Modernization*: 98.

control.[199] The objective of sea denial is to "deny control of the ocean to an opponent."[200] This strategy includes a global strike option through the employment of nuclear fast attack and ballistic missile submarines.[201] Submarines are used conduct surveillance far from a nation's home shores and to clandestinely track an adversary's naval assets.[202] During conflict, unrestricted submarine warfare would be launched against enemy surface vessels as well as merchant ships.[203] Long range bombers would be used to patrol and interdict sea lines of communication. The employment of missile systems is also a key part of the sea denial strategy. A power employing this strategy would invest in significant amount of anti-ship missiles and employ them on strategic terrain within range of key chokepoints, approaches or transit routes.[204]

The strategy is tailor made to counter extra-regional presence and power projection in the NOIA. Upon the advent of hostilities, hostile naval forces operating in the NOIA or attempting to enter it would have to penetrate several rings of defenses through considerable effort.

In terms of gains, the adoption of a sea denial strategy would allow for India to continue to maintain an independent strategy that is not reliant on the participation or sanction by other powers. The threat of an extra regional power intervening in a conflict in south Asia involving India is reduced; an U.S.S Enterprise style intervention would not be easily accomplished if the India navy employed sea denial.

The potential losses that are attributed to adopting a sea denial strategy are considerable. Namely, the international community would have taken umbrage to a naval

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[199] Sea Denial is considered to be a hallmark of Soviet naval strategy and doctrine.

[200] George E. Hudson, "Soviet Naval Doctrine and Soviet Politics, 1953–1975," *World Politics* 29, no. 1 (1976): 107.

[201] Robert Warring Herrick, *Soviet Naval Strategy* (Annapolis: United States Naval Institute, 1968). 125–30.

[202] The employment of various types of submarines is a key component of a sea denial strategy. The Soviet Union maintained a massive submarine force to secure its coastline, conduct offensive operations and to imperil the shipping lanes of a potential adversary. Note the weighting toward submarines in the Soviet navy in the late 1980s. The navy had 360 submarines compared to 274 surface combatants. William E. Odom, "Soviet Military Doctrine," *Foreign Affairs* 67, no. 2 (1988): 114.

[203] Herrick, *Soviet Naval Strategy*: 133.

[204] Ibid., 144.

power that sits astride one of the world's major shipping arteries declaring that its primary naval strategy is one of sea denial. Asian powers that rely on this artery such as Japan, Indonesia, the Philippines and China would surely have viewed an Indian sea denial strategy with a great deal of concern. The U.S. (viewed by most powers as being responsible for keeping global shipping lanes open) would have been forced to respond to such an open challenge to the free flow of maritime traffic.

The probability that a sea denial strategy will receive widespread support and promotion in the INSE is low. After the Enterprise incident, the Indian navy flirted with the idea of making sea denial the centerpiece of Indian naval strategy.[205] The navy significantly upgraded its submarines during this period in addition to upgrading its nascent anti-submarine capability. This flirtation was short lived as institutional biases toward maintaining the surface warfare focused regional power strategy remained in the forefront. This tendency is evidenced by naval acquisition patterns during the 1980s. While purchases of systems that can be used to support a sea denial strategy were made, other important capabilities necessary to implement the strategy were not. For example, while the purchase of HDW Type 1500, class-209 and Kilo submarines were made, significant investment in other systems such as anti-ship missiles, surveillance and sensor technology was not.[206] On the other hand, significant capital was spent on equipment designed to implement the regional power strategy such as India's second aircraft carrier.

Both the low expected utility of gains combined with the potential for losses placed the sea denial strategy on similar footing to the minimum deterrent strategy as options that did not receive meaningful consideration as 21st century Indian naval strategy.

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[205] Dasgupta, *Arming Without Aiming India's Military Modernization*: 89. Cohen and Dasgupta's contention is not supported by any documented changes to doctrine or strategy. There was a school of thought within the Indian navy that the ability of extra regional powers to intervene in waters close to India was a major problem that must be countered.

[206] Roy-Chaudhury, *Sea Power & Indian Security*: 107–21.

3. Option 3–Regional Superiority (Green Water)

Maintaining naval superiority over other NOIA littoral nations would be the main priority. This option was considered to be the status quo strategy by Indian naval leadership.[207]

Upgrading existing platforms and replacing ships that have come to the end of their service life cycle through a combination of indigenization and foreign purchases would be a priority if the regional superiority strategy was extended. Under this scenario, the employment of an aircraft carrier would not be out of the question, however, the argument that more than one carrier is required to maintain regional superiority would have stood on shaky ground. In terms of surface combatants, a mix of destroyers, frigates, short range submarines and support vessels would be necessary to support the strategy. Interoperability with other navies would not be featured prominently under a continuation of the regional superiority strategy because it would not be a critical requirement.

The benefits of this approach are its low cost; the indigenous aircraft carrier project, the Air Defense Ship (ADS) costs approximately $1.5 billion USD. In addition, the refurbished carrier Admiral Gorshkov that the Indian purchased from Russia costs upwards of $1.5 billion dollars. The suite of 45 MiG 29 fighters purchased to operate from India's carriers cost $ 2.2 billion USD. In comparison, three new Shivalik class stealth frigates cost $170 million USD and three Kolkata class destroyers cost 2.4 billion.[208]

[207] Barnett, "India's 12 Steps to a World Class Navy."

[208] "India's third indigenous stealth frigate INS Sahyadri commissioning on July 21," The Economic Times, http://articles.economictimes.indiatimes.com/2012–06–25/news/32409379_1_indigenous-stealth-frigate-ins-satpura-ins-shivalik.; "World Navies, India." "Indian Warships Costs Escalate over 225%," StratPost, http://www.stratpost.com/indian-warships-costs-escalate-over-225.. Exchange rates used to convert Indian rupee values to dollar from 9/5/2011 and 6/20/2011. Exchange rate data derived from http://www.dollars2rupees.com/

Additional benefit also derives from the fact that the strategy did not represent a radical departure from the policies that the Indian navy implemented for the first 50 years of its existence.[209] The littoral nations knew what to expect from the Indian navy, thereby contributing to stability.

There were very few losses that could have been accrued by continuing the regional superiority strategy. The preceding chapter presented evidence to suggest that the Chinese naval buildup at the turn of the century would not be substantive threat in the NIOA for decades. The U.S. would still be the preeminent power in the world's oceans and was not hostile toward India. The regional superiority naval strategy could have been continued.

The probability that the regional superiority strategy would succeed are high. The national security priority has always been to ensure that it was the dominant player in south Asia. A navy that maintained its regional advantage would meet the minimum bar of acceptability of the Indian security establishment and would have been continuously supported. The regional superiority naval strategy advanced Indian interests for decades. The low cost of this strategy coupled with the surety of positive gains makes this strategy the option with the highest expected utility. In addition, the variance of outcomes was not substantial; the likely gains of staying the strategic course were moderate with a high probability of success coupled with relatively small losses.

4. Option 4–Blue Water / International Coalition Navy

The most ambitious option that was considered by the Indian national security elite was to turn India's navy into a blue water force capable of sustained operations far from Indian shores.[210] This navy would have the ability to conduct multiple missions

[209] The idea that Cohen posits to describe overarching Indian strategy is 'strategic restraint'. The approach to policy that the Indian navy has pursued since independence is a corollary to strategic restraint. Another important contribution that Cohen makes is that even today there is not a great deal of full throated enthusiasm for abandoning strategic restraint as an overall foreign policy framework. Dasgupta, *Arming Without Aiming India's Military Modernization*: 26–27.

[210] This vision of the role of a navy was codified in Alfred Thayer Mahan's classic work *The Influence of Sea Power upon History, 1660–1783.* This work popularized the notion that great powers also possessed large navies that were able to operate at vast distances to secure shipping lanes and must be able to defeat the navy of an adversary in a decisive battle at sea.

such as sea control, sea denial and amphibious operations.[211] This version of the Indian navy would be built around aircraft carriers. Aircraft carrier task forces made up of destroyers, frigates, submarines and support ships would patrol not only the waters of NIOA, but venture further out to areas beyond the Straits of Hormuz and Straits of Malacca. An important aspect of this strategy is the capability to operate as a part of an international naval coalition. Interoperability with the U.S. navy is paramount due to the leading role that the U.S. plays in maintaining global maritime security.[212] Adoption of this strategy would validate the idea that the Indian security elite view China's increasing presence in the NIOA as irreversible and that India's best chance to meet the maritime challenge posed by China would be with a large, multipurpose navy that would serve as a part of a larger coalition containing Chinese maritime ambitions. Relative navy superiority in south Asia would not be enough to check Chinese advances.

The possible strategic advances gained by successfully implementing the blue water naval strategy are substantial. If the Indian were to build an advanced navy that was able to ensure maritime security in the Indian Ocean and play a value added role in missions abroad a part of a coalition and simultaneously stymied Chinese plans for naval bases and increased naval presence in the NOIA then the geostrategic benefit would be enormous.

On the negative side of the ledger, developing a blue water naval strategy is the most expensive of all options. As noted above, the estimated cost of each aircraft carrier is around 1.5 billion USD.[213]

In addition, employing high value assets such as aircraft carriers are increasing risky. The proliferation of anti-ship missiles and anti-access technologies such as submarines, remote sensing and surveillance and mines has the potential to limit the utility of carriers by increasing the distance that they can safely operate from contested

[211] *Indian Maritime Doctrine*: 69–88.

[212] Barnett, "India's 12 Steps to a World Class Navy."

[213] Ladwig, "India and Military Power Projection," 1166.

areas.[214] For example, during the Falklands War, the British aircraft carrier HMS Hermes could not provide close air support to ground operations because of concern about Argentine anti-ship missiles. In that same conflict, the Argentine aircraft carrier Veinticinco de Mayo did not leave the harbor because of the threat posed by British submarines. A vigorous debate on the vulnerability of large carriers has been going on inside of the American naval community.[215] Indian military officials have also recognized the weaknesses of a carrier centric navy given the evolution of anti-access, area denial technology.

An Indian naval buildup would also run the risk of militarizing the NOIA as other littoral nations build naval forces to counter the Indians.

Assessing the probabilities associated with the possible pros and cons of the blue water naval strategy require an examination of the assumptions that Indian naval policymakers were operating under as they deliberated on the course of action. According to Barnett, Indian naval policymakers assumed that a blue water naval strategy would be a viable option in the 21st century because: 1) the security competition between India and its continental rivals, Pakistan and China would decrease; 2) a "far" larger share of the defense budget would be allocated to the navy in the future (consistently above 15%). If adopted, successful implementation of the blue water naval strategy would hinge on these factors remaining true. As was previously noted, the navy's share of the budget has never exceeded 15% and has often been relegated to single digits. The health of the military budget, and correspondingly, the naval budget depends on steady Indian economic growth. Indian GDP growth in the latter half of the 1990s at the beginning of the military buildup averaged 8% per year. The strong economic performance that has become part and parcel of the Indian economy since the reforms of the early 1990s must continue in order to ensure the continued growth of the Indian military. An underperforming Indian

[214] Barry Watts Andrew Krepinevich, Robert Work, "Meeting the Anti Access and Area Denial Challenge," (Washington, D.C: Center for Strategic and Budgetary Assessments, 2003), 2–8.,Robert C. Martinage Michael G. Vickers, "The Revolution in War," (Center for Strategic and Budgetary Assessments, 2004), 69–75.

[215] Anonymous, "On the Verge of a Game Changer," *Proceedings* 135, no. 275 (2010)., Lieutenant Colonel J. Noel Williams Captain Henry J Hendrix, "Twilight of the Superfluous Carrier," *Proceedings* 137, no. 5 (2011).

economy could bring back the days of austere military budgets. In an environment of austerity, India the institutional advantage that the continent focused services have over budget prioritization would come to the fore at the expense of the navy. For a service that relies on long-term capital allocation in order to complete multiyear ship construction projects the realities of the budget will impact the effectiveness of the navy's strategy and doctrine.

The notion that the threat from Pakistan and China on the Indian subcontinent would abate during the first decades of the 21st century is highly debatable. At the turn of the century India and Pakistan faced off in the Kargil War over contested territory in Kashmir. The presence of Chinese divisions over the border in Tibet cannot be dismissed even though the military action associated with the border dispute has not flared since 1986. To assume that militarized borders in with Pakistan and China will somehow dissipate over time without reasonable expectation that the issues of contention between India and Pakistan and China are resolved (territorial disputes in Kashmir and Arunachal Pradesh respectively) is risky. Crises can arise unexpectedly in along the border which can quickly escalate to armed conflict. The probability of a permanent shift in Indian defense priorities continuously allocate a significant amount of resources to the navy is unlikely.

The blue water navy strategic option has both the highest variance in outcomes and a lower expected value than the regional superiority option. If successful, the strategy will achieve the goal of securing the NIOA in a spectacular way. China will be deterred from operating (through naval bases or patrolling) within the NIOA and India's interoperability with international navies, the U.S. navy in particular, will enable it to play a critical role in a wide range of international maritime security operations. In addition, it would stand ready to 'plug into' an international naval operation directed against a regional adversary. However, if the strategy fails, it will do so spectacularly. The south Asian littoral region will be more militarized nations adopting an anti-access / area denial approach to challenge India's carrier battle groups. Cost overruns coupled with India's less than stellar reputation for bringing indigenous military technology to field on schedule could push deployment of the ships necessary to implement the strategy

beyond the time that the strategy will Lastly, a large, blue water Indian navy could send a signal to China that if it wants to truly secure its lines of communication to the Middle East, it must significantly enhance its naval capabilities beyond the levels that it has planned. The Indian naval establishment has recognized that it cannot match China's level of naval spending in the long run. Former Indian Navy Chief of Staff Admiral Sureesh Mehta commented in 2009 that: "In military terms, both conventional and non-conventional, we neither have the capability nor the intention to match China, force for force."[216] A commitment by China to force its way through the Indian Ocean by increasing the size of its navy beyond what it has planned to do already would overwhelm India and create a true strategic problem.

For these reasons, the Blue Water navy option is both the riskiest option and simultaneously the choice with the lowest expected value. However, as predicted by Prospect Theory, it is the option that the INSE has embraced and is moving forward to implement.

[216] Sureesh Metha, "India's National Security Challenges," *Outlook India*, September 26 2012, http://www.outlookindia.com/article.aspx?261738

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VI. CONCLUSION

The decision to shift decisively from a green water navy doctrine to a blue water doctrine can best be explained through Prospect Theory. The alternative of modeling India's response to Chinese presence in the Indian Ocean as the rational response to a threat or a perceived threat has several deficiencies. I have presented evidence to suggest that the "String of Pearls" phenomenon is primarily economic in nature; it is the manifestation of Chinese strategy to expand its influence in south Asia through economic means. It was also shown that the many of the supposed sites for potential Chinese naval bases were militarily vulnerable and would require significant resources to maintain. For these reasons, I surmise that the String of Pearls poses no real military threat to India. On the other hand, there were several factors that may have contributed to the perception of threat in the minds of the INSE. Factors such as the Observer's Sense of Vulnerability, Meaning of History, Violation of Rules, Offensive Capability and Offensive Intent all worked to create the specter of a threat that may not be grounded in reality. Even if threat were the driver of the INSE endorsement of the blue water naval doctrine, it remains unclear why this strategy rose above all others in terms of feasibility. If India's green water naval force and doctrine served to protect its interest and to support success in war why would it so easily be abandoned? The threat-response model provides little insight into the mechanics of elite decision making in the face of crisis. While one can surmise that a state will respond to a threat, there is no clear way to predict what the response will be.

The application of Prospect Theory to the case of the Indian response to the String of Pearls provides several valuable insights. Namely, it allows an analyst to project the response of a state or state organization to a crisis if that event is viewed as a loss by policymakers. I have shown that the INSE viewed increasing Chinese presence in south Asia as a loss, thereby making them more likely to formulate and endorse risky strategy to regain ground. Of the four naval strategy options that were being considered at the turn of the century, the blue water strategy emerged; it was the riskiest option because of the

high variance of outcomes that could result from its implementation as well as a low probability of success. Prospect Theory analysis provided more explanatory power in this case than the threat-response model.

E. PROSPECT THEORY APPLICABILITY TO MILITARY INTELLIGENCE AND OPERATIONS

Prospect Theory has already been utilized in the study of international relations to analyze top level decision making. What has been shown in this paper is the potential for Prospect Theory to be used to model military decision making processes. For example, events in military history such as Hitler's decision to launch the campaign that would come to be known as the Battle of the Bulge during World War II or General MacArthur's amphibious assault into Inchon during the Korean War are just two examples of many which Prospect Theory could provide critical insight into the mechanics of high level decision making. In the first instance Hitler endorsed a risky plan to break through the Allied front in France along a narrow sector and drive forces toward the Port of Calais, hoping to inflict a devastating loss on the Allies. In the second case, General MacArthur endorsed a risky amphibious assault behind North Korean lines in order to cripple a once rapidly advancing army. Prospect Theory may also have battlefield applicability. Knowledge of the principle insight of Prospect Theory, that if a decision maker is psychologically in the domain of losses he will subsequently be inclined to select the riskiest options from a set of options, will allow a Commander's Intelligence staff to more confidently project an enemy's most likely course of action.

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