ATOMIC POSTALGIA

ANTIQUITY, MODERNITY AND THE ORIGINS OF THE NUCLEAR PROGRAM IN INDIA

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Abstract

This paper examines the origins and motivations for the nuclear program in India. It focuses particularly on the inception of the program in the early 1940s—a period of Indian nuclear history that is often overlooked in favor of analyses of the later nuclear missile tests of 1974 and 1998. These later analyses, although well-intentioned, are either too limited in their historical scope or too vague to be of much use in understanding the initial motivations for a nuclear program. As an alternative, this paper finds that an in-depth historical investigation of the program’s early formation, and especially that of its two main instigators, Jawaharlal Nehru and Homi Bhabha, is essential to understanding the deeper motivations and perceptions shaping the program as it developed in later years. By tracing the intellectual journey of these ‘two fathers’ of Indian atomic power across their writings and letters, this paper brings out a uniquely Indian sense of modernity, derived from the vision of a morally and socially advanced ancient India. This blend of modernity and antiquity is then used to coin the concept of nostalgia—the nostalgia for a past that may never have existed—that, as a form of constructive history, can be used to explain the subsequent evolution of the nuclear program in India. The result is a model that not only helps to provide insight into the Indian case today, but also has the potential to be used in other similar cases that rely on the intersection of intellectual history with policy.
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Finally, this thesis is dedicated to my parents, Vandana and Ravinder. It is because of their efforts to teach me to write, that one weekend, all those years ago, as well as their cunning use of reverse psychology—“केशव: इतना मत पढ़, पढ़ -पढ़ के पत्थर बन जायेगा”—that I stand here today.
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Prologue

Reorientation

Think of them, those distant ancestors of ours, marching on and on, and suddenly reaching the banks of the noble Ganga flowing majestically down to the sea. How the sight must have filled them with joy! And is it any wonder that they bowed down to her and praised her in their rich and melodious language?

--Jawaharlal Nehru, in a letter sent on January 9th 1931 from Naini Prison to his daughter, Indira Priyadarshini Nehru.

If you are fortunate enough to travel through India today, you will see a country still branded with the symbols of its ancient history. Although the political entity that constitutes India is barely adolescent by world standards, her land and peoples—the majestic temples, ruins, and mosques, the vast mountain ranges, the steppes, the plantations, the hustle of her markets, the bustle of her slums—are as old as civilization itself. As Mark Twain once wrote, “[India is] the mother of history, grandmother of legend, great-grandmother of tradition, whose yesterdays bear date with the mouldering antiquities of the rest of the nations.” In sum, she is Bhārata Mātā—‘Mother India’—who, though at times plundered and ravished, retains her steadfast composure with the grace and quiet wisdom of an old woman.

And yet this image of ‘Mother India’ only constitutes a fraction of the whole picture. Beyond the depth of its antiquity, India is very much the modern state—a vast globalized democracy, with all the cell-phones, skyscrapers and Pepsi required for the


vestments of development. In this regard, India is sometimes labelled as a ‘developing’ country, one still awaiting the necessary economic and technological transformations required to become ‘truly developed.’

Nonetheless, while the development model is useful for economists, it is too generic to accommodate the complexity and richness of Indian history. India cannot properly be understood on such a linear timescale with a finite end: its past is not a simple progression of events, but an elaborate dance with its own flourishes and fumbles on a stage that encompasses many different geographies and time-periods. *Indian modernity is far from modern.* Indeed, the lands of South Asia and the shipways of the Indian Ocean have, for millennia, been witness to the constant waxing and waning of civilizations: some highly advanced; others less so. The India of today is but a *kedgeree* of these civilizations—a chaotic mix of modernities and antiquities—whose bountiful historical treasures are still waiting to be discovered.

The challenge and delight for the historian of India thus lies in navigating this complex space between Indian antiquity and modernity. This thesis, which focuses on the processes that gave rise to India’s nuclear program, is a small part of this greater process of navigation. While there are many ways to approach the subject of India, nuclear power, with its blending of deep nationalistic ambitions with the frontiers of scientific progress, is one that gets to the heart of both antiquity and modernity.

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3 For an excellent overview of how this flux of civilization around the Indian Ocean seascape has played out, see: M. N Pearson, *The Indian Ocean* (London; New York: Routledge, 2003).

4 A *kedgeree* is an Anglo-Indian rice dish made by mixing different foods together.
There is, in particular, something about the process of nuclear power that seems to cause people to turn their thoughts to India. George Perkovich, the contemporary scholar and author of *India’s Nuclear Bomb*, is perhaps the most well-known Westerner in the academy today to focus his attentions on the Indian nuclear establishment. He is, however, only a small part of a large and ancient milieu that includes Indians as well as foreigners. Itty Abraham, a student of the nuclear virtuoso Scott Sagan, is one of few with his hands in both the Indian and Western academy. His innovative works on postcolonial fetish and secrecy in the formation of the Indian nuclear program are some of the most ambitious and interesting takes on the subject of nuclear power to this day.

It is not just academics who are drawn to India. Robert Oppenheimer, for instance, upon first witnessing the colossal power of a nuclear explosion he brought into being, famously paraphrased the Hindu god Krishna in the *Bhagavad Gita*, saying: ‘I am become death, the destroyer of worlds.’ For many men of action, including Alexander the Great with his fascination with the sages of the Indus, India was and is still a place of deep, mystical truth. Nuclear power, the extraction of energy from the essence of existence itself, thus naturally draws us to this aspect of India’s image, particularly in the West. To use a word from an older time, it causes us to ‘reorient’—literally, to turn towards the ‘Orient.’

By examining the history of the Indian nuclear program, this thesis thus functions as a ‘reorientation’ of the nuclear literature—a turn back to the East. As in all

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works that, consciously or unconsciously, try to derive wisdom from the ‘Orient,’ there is always the danger of exoticizing, of generalizing too much, or even somehow aiding imperialism by ‘colonizing’ its mental space. Yet, if we leave the Indian case only to the Indians, we risk an even greater danger of losing our access to the wisdom altogether. For, even though ‘the East’ may be an archaic construct of an earlier, colonial world, it still carries with it many of the roots of own identity: There is no West without the East; to lose our connection to the East is to forget our own histories. The Anglo-Indian novelist Salman Rushdie expresses this hazard most eloquently: “Disorientation is loss of the East. Ask any navigator: the east is what you sail by. Lose the east and you lose your bearings, your certainties, your knowledge of what is and what may be, perhaps even your life. Where was that star you followed to the manger? That’s right. The east orients.”

In other words, the East is at the heart of our collective humanity. To study it is not only to reorient in the literal sense, but also metaphorically, as a means to turn ourselves back toward those histories that make up our own shared identities. It is with this spirit of reorientation that this thesis is written, in the hope that a deeper familiarity with India and its nuclear program will also go some way to providing a clearer understanding of the greater world we live in, and our own fragile place within it.

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7 In the age of Edward Said and the school of post-colonialism, one might naturally be suspicious of terminology so overtly ‘Orientalist,’ particularly in its historic use as a justification for exploration and conquest. Certainly many of the examples given here exoticize India in way Said would probably not have liked. Nonetheless, it remains the case that much of the value and truths of studying India have come from motivations that are imperialist. So as long as one is careful with the evidence and insightful about the assumptions one makes, this should not necessarily discredit their use in understanding India or its history of nuclear power.

Introduction

The Essential Question

This thesis primarily seeks to answer one question: why did India decide to pursue a nuclear program in early twentieth century? While there are many explanations in the existing literature, our understanding is still far from comprehensive. Part of this has to do with an emphasis in the literature on nuclear weapon proliferation, an obsession that leads scholars and policymakers of India to focus almost exclusively on its nuclear tests of 1974 and 1998.\textsuperscript{10} Although it is certainly important to study these grand events, without an appreciation of the many little steps that brought them into being, we are left with, at most, a stunted understanding. As far as it can, this thesis will thus search for narratives beyond those of nuclear proliferation, in order to access the deeper, underlying motivations that bring nuclear programs to life in the first place.

Indeed, nuclear weapons and power plants do not spring up overnight; they take years and decades of planning and thought. The structure and form of nuclear administrations today are but relics from earlier times, fossilized remnants of the ideas and desires of their makers. Each grand event, each new power plant or nuclear explosion carries with it these fossilized desires and imbues it with new life. In the Indian case, these fossils consist of the even deeper-rooted nationalistic desires of its first Prime Minister, Jawaharlal Nehru, crossed with the technocratic ambitions of its

\textsuperscript{10} ‘Proliferation’ is defined here as the spread of nuclear weapons-related material and information—e.g. fissile products, knowledge of missile technology etc.—with the aim to facilitate the acquisition of nuclear weapons. This idea will be explored in more depth as the thesis progresses.
chief nuclear scientist, Homi Bhabha.\footnote{Nehru’s nationalism and internationalism is a fascination subject, itself worthy of a whole book. For our purposes, it is worth distinguishing the ‘nationalistic’ feelings Nehru is said to have here from ‘nationalism,’ a philosophy that Nehru accepted only in the context of greater internationalism.} The combination of the two—antiquity and modernity, nation and science—is what defines the nuclear program in India.

To arrive at the origins of the Indian nuclear program, therefore, we will need to address the deeper motivations of its two prime movers—Nehru and Bhabha. By examining their intellectual works, their lives, letters and loves, this thesis will present an intellectual history not just of two men, but the program they created together. What we shall find is that, at the heart of India’s nuclear ambitions, there is the feeling of nostalgia for a past never experienced, and a future that had not yet happened. This is *postalgia*, a new interpretative lens with which to view the Indian nuclear program.

Nonetheless, before we begin our investigation into *postalgia* and the roots of the Indian nuclear program, it is worth paying heed to its flowers—those great nuclear moments in India’s later history that dominate the majority of the present discourse. By doing so, we will not only gain an acquaintance with the issues at the forefront of current nuclear debates, but also an appreciation for the sort of interpretative puzzles for which an in-depth understanding of *postalgia* and the origins of the program can most help to solve. The most notorious of these interpretative puzzles, and the one that occupies most of the Indian nuclear thinkers, presented itself in 1974, during the Prime Ministership of Jawaharlal Nehru’s daughter, Indira Gandhi. This was the year Buddha returned to India as a bomb.
When Buddha Smiled Again

For the majority of people who study or have to contend with it in their profession, the story of the Indian nuclear program began on the 18th May, 1974, under the hot salt ranges of Rajasthan’s Thar Desert. The *Smiling Buddha* nuclear test of 1974, with its seemingly oxymoronic designation as a ‘Peaceful Nuclear Explosion’ (PNE), was India’s first successful nuclear test. While India’s nuclear capabilities at the time were hardly secret, the explosion took many in the international community by surprise. For example, in a top-secret telegram dated only four months before the test, the United States concluded that it had:

> seen no evidence to confirm an Indian decision to explode a nuclear device or to manufacture nuclear weapons or delivery systems. [...] India's present international and economic position appear to us to tip the likelihood of an early test to a lower level than in recent years.¹²

Although the intelligence report was correct about India’s inability to manufacture nuclear weapons with delivery systems—no such weapon was tested until 1998—it was far off the mark concerning Indian aspirations to explode a nuclear device. Just four months later, the United States found itself, like many others, at a loss. Its rationalistic worldview challenged, it was now forced to grapple with the seeming enigma that was the mind of the Indian nuclear establishment. Why did this happen? How could the Indians do something so seemingly irrational, just as everything appeared to be going well for them internationally? Why did Buddha smile again?

**Domestic Politics**

A common explanation at the time gave primacy to underlying domestic political considerations. The initial American intelligence analysis following the test, for instance, found the chief Indian motivation to be the “need for a psychological boost, the hope of recreating the atmosphere of exhilaration and nationalism that swept the country after 1971 [the creation of Bangladesh].”\(^{13}\) This “boost” was supposedly a much needed remedy for the “rising tide of disillusionment and discontent” in India at the time, brought about by what it saw as a period of “dismal economic performance and severe political unrest.”\(^{14}\) In its most generous light, the report thus portrays the test as a concerted effort to unite the Indian people and thereby prevent possible unrest. However, based on its skeptical tone, it seems to indicate that the test was more likely a calculated and risky move by the Indian establishment to temporarily increase its domestic popularity by manipulating nationalistic feeling—the multi-billion rupee governmental equivalent of a publicity stunt.

A similar finding was put forward by the Soviet Union at the time, acting through its embassy in Hungary: “the [Indian] government is going to restore internal order with a firm hand [using this test], because the chaotic internal situation endangers the position of the government.”\(^{15}\) Given Indira Gandhi’s controversial Emergency Raj

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14 “US Embassy India Cable 0743 to State Department, ‘India’s Nuclear Intentions,’” 1.

and later actions against the Sikh community, such a Machiavellian diagnosis might fit the character of her administration well. Nonetheless, and without necessarily defending the integrity of her personal motivations, it is still difficult to believe that a move that she knew was certain to jeopardize her international and economic standing would be the shrewd Prime Minister’s preferred method of garnering support. Indeed, if it were Gandhi’s intention to use the nuclear test to improve her party’s public standing, she surely failed—as evidenced by the widespread calls for her to step down within the month.16

And yet, while Indira Gandhi’s lack of foresight does not on its own discount the validity of what has come to be known as the ‘domestic politics’ argument—that India’s nuclear test was the product of her parochial, political interests—the argument itself still leaves much to be desired. How, for instance, do we explain the timing? If domestic unrest was so crucial, why did she wait until the unrest of the 1970s to carry out the test, when there was so much to choose from, as it were, in the previous decade? The monsoon failure of 1965 or the disastrous 1967 elections would each have provided a far riper political opportunity. Perhaps Gandhi was simply incompetent. Perhaps she was not the only one making these decisions. Perhaps there were other personal factors at play.

Unfortunately, these are all considerations for which there are few means of evaluation; to understand the ‘domestic politics’ of Gandhi would be to get into the inner workings of her mind, a task that requires an almost omniscient grasp of the source material. Even when we do know certain facts, the interpretations are not clear cut. For

instance, the nuclear scholar Itty Abraham claims that “the decision to conduct the explosion was taken nearly two years before the actual event.”

If this is true, then how could the economic and political disturbances of 1974 possibly account for the desire to conduct the test, as claimed in the intelligence reports? Indeed, Indira Gandhi was probably more popular in 1972 when she ordered the test than at any other point in her career. As Abraham concludes, “it is equally possible to argue that the 1974 explosion was an expression of power rather than weakness.”

Despite these failings, this ‘domestic political’ argument has found considerable traction in the subsequent nuclear literature. Scott Sagan, the author of the widely read “Why Do States Build Nuclear Weapons,” offers it as one of his major models for why states decide to ‘go nuclear.’ While admitting that he does not know the exact motivations of Indira Gandhi in 1974, he asserts that, based on her previous politics and what he claims to be an upswing in voter support following the test, domestic politics might have had a significant role. The benefit of citing domestic factors is that it allows

18 Ibid.
20 Sagan’s claim about voter support runs directly counter to mine. While we cannot know who is in the right regarding Gandhi’s actual electoral popularity, we do know that within the month she was facing numerous civil protests, newspaper denouncements and a court order to “step down” on charges of corruption—hardly the political success to which Sagan seems to be referring. See: Wolpert, *A New History of India*, 417. Sagan is joined in his convictions more generally by Etel Solingen, whose arguments bring in economic and other domestic factors as determinant factors when thinking about nuclear proliferation: Etel Solingen, “The Political Economy of Nuclear Restraint,” *International Security* 19, no. 2 (1994): 126–69. Other such thinkers include Ashok Kapur, Jack Snyder, and George Perkovich—who applies the domestic logic to India, and its deeper nuclear history. See: Ashok Kapur, *India’s Nuclear Option: Atomic Diplomacy and Decision Making* (New York: Praeger, 1976); Jack L. Snyder, *From Voting to Violence: Democratization and Nationalist Conflict* (New York: Norton, 2000); Perkovich, *India’s Nuclear Bomb: The Impact on Global Proliferation*. 
scholars to avoid answering the harder questions. By presenting voting patterns or opinion polls, they can claim to deduce in the minds of policymakers certain motivations that fit the particular role the author has prescribed to them. Surely, they say, Indira Gandhi must have wanted to increase her own political capital in 1974? Why else would she do something so otherwise ‘irrational’ as to explode a nuclear device?

The problem with this line of retroactive thinking is that it assumes a level of conceptual calculation not necessarily consistent with the way people act. Even if we accept the premise for now that humans are generally rational in their actions, it does not mean that rationality is always contingent on thought alone. Often people act because they feel an emotion or simply out of instinct. They are still, however, acting rationally. It is rational to cry when you are sad. It is also rational to call for a Peaceful Nuclear Explosion if you feel that it fulfils some deeper patriotic urge, perhaps derived from your time with your father and his stories of ancient India.21

Take, as an extreme example, the psychotic individual who hallucinates an angry monster in the corner of the room. Is he not, by cowering in fear, acting rationally? Can we deny that, faced with a similar situation, and depending on our analysis of how best to protect ourselves from such a threat, we might not do the same? In other words, what may seem to the onlooker to be madness—being scared of something that does not exist—is actually an appropriate response based on the data and interpretation available to the actor in question. Indeed, the majority of actions that we might label as irrational or illogical may in fact be perfectly understandable responses to extraordinary factors to which we do not have access. Rationality is not the same as sanity, insight or prudence.

21 This urge might, for instance, be called postalgia.
And so, what were the very *rational* factors guiding Indira’s domestic politics? Did she act in order to protect the security of her nation? What international treaties or considerations were guiding her? What personal factors mattered most? Once again, we are left with the problem of figuring out the motivation for actions, just on a lower level. It seems that all attributing things to domestic factors does is push the interpretative question into a new, smaller, dimension. Yet, the motivation question still remains.

**Realism and Constructivism**

As a solution to this problem, the proliferation discourse offers two further interpretative models: realism and constructivism. Applied to nuclear weapons, the realist model contends that geopolitical security concerns, based on rational calculus, are what primarily drive the decision to procure nuclear power.²² Realism in general is perhaps the most popular paradigm in use by policymakers, and for good reason: few other predictive models can boast as excellent a track record across so many political issues. The United States has almost always stressed realism as a major factor in the Indian decision to build and shape its nuclear program. A typical example is the 1963 National Intelligence Estimate:

The border war has convinced most Indians that Communist China represents a clear danger to India’s security and prestige, and that the

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threat of Chinese domination may affect the progress and direction of the Indian nuclear program.\textsuperscript{23} Most of the US intelligence reports since then, and particularly after the Chinese test of 1964, have continued to reiterate this security aspect—which, each time, is said to be likely to motivate deeper Indian desires for nuclear weapons.

While one would expect security concerns to weigh in somewhat in the desire to produce what is, in essence, a large bomb, the Indian case is not so straightforward. For one, if security concerns about China were its primary nuclear motivation, then why would India delay its test until ten years after the Chinese one? Moreover, why would India wait a further twenty four years to sufficiently weaponize its nuclear power? As Sagan rightfully points out, the realist model, although easy to understand and commonly accepted, overlooks the complexity of decision-making situations and has a tendency to ahistorically backpedal through events, justifying every action in retrospect as a rational response to some security threat, no matter how far back.\textsuperscript{24}

That is not to say that realism is a defunct model altogether. While it might offer little explanatory power for how the Indian state seemed to have acted in regards its nuclear program, it might provide something in the manner of understanding the personal motivations of the various individual actors involved. In the wise words of George Perkovich, one must be sure to “distinguish Realism as a conceptual and policymaking paradigm from the use of the term "realism" to connote an actor's


\textsuperscript{24} Sagan, “Why Do States Build Nuclear Weapons?".
awareness that the international milieu is a frequently rough place where leaders and states have mixed motives ranging from idealism to power lust, and where threats of violence often appear, requiring leaders to prepare for the worst. Indira Gandhi may well have been a ‘realist,’ even if ‘realism’ does not adequately explain her policy decisions. Realism, in this sense, is thus also an aesthetic paradigm—a system of personal value-choices.

Realism, when seen as an aesthetic choice, becomes a product of what is perhaps the proliferation literature’s most complete model: constructivism. Put forward by thinkers like Peter Katzenstein, constructivism describes how cultures and perceptions shape the way even security apparatuses think. Its fundamental argument is that policymakers are shaped primarily by their perceptions, and not simply some ‘objective’ rational calculus.

In particular, constructivists like to address ‘norms’—grouped perceptions that guide institutions. For example, the sociologist Martha Finnemore contends that “conformance with international norms,” can affect the motivations of decision makers, especially if these norms create particular taboos. Her argument is supplemented with many others in the proliferation literature that deal with the use of nuclear weapons as symbols and shapers of identity.

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28 On the role of identity, see: Glenn Chafetz, Hillel Abramson, and Suzette Grillot, “Role Theory and Foreign Policy: Belarussian and Ukrainian Compliance with the Nuclear Nonproliferation Regime,”
believe that “weapons purchases are structured and driven by institutionalized normative structures that link advanced weaponry with modernization and sovereignty.” The idea that nuclear weapons can represent signifiers of modernity is crucial to understanding the Indian program and something this thesis will explore and expand upon in later chapters.

Nevertheless, constructivism, while useful for its description of how shared perceptions can shape policy, is limited in its scope. Simply knowing that things are shaped by perceptions does little to explain what these perceptions are. Moreover, by tying themselves to theories of proliferation, constructivist thinkers in the nuclear discourse have tended to ignore the crucial parts of the nuclear narrative that fall outside the realm of proliferation, but which are essential to understanding it. In India’s case, this means the construction of the nuclear program from its inception in 1944 and not just the subsequent tests. Moreover, and as historians have known for years, to really get a grasp on motivations, one has to investigate the details not just of shared norms but individuals. It is individuals who act and individuals who make history. This thesis,

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in terms of methodology, is also thus a means to refocus the constructivist debate away from proliferation and back towards the individual.

And so, what really went through Indira Gandhi’s mind on May 18th 1974 when the news arrived of the explosion? Did she divine, in entrails of the gutted land before her, the defeat of India’s enemies and the safety of its people? Did she hear, in the tittering of her aides and the cheers of her nuclear scientists, the papery sound of votes dropping into her party banks? Or perhaps it was her father she saw: the father who would narrate to his little Priya her favorite tales of the golden days of Ancient India and the great civilization that once ruled the world; the faint echoes of those marching Indian ancestors; the majestic waters of history flowing into the future.

**Beyond Proliferation**

India has not ever been an easy country to understand. [...] Perhaps it is too deep, contradictory and diverse, and few people in the contemporary world have the time or inclination to look beyond the obvious [...].

--Indira Gandhi, May, 1974, shortly after the *Smiling Buddha* nuclear test.

To answer this question about Indira Gandhi’s mind, or to answer our central question concerning the origins of the nuclear program as whole, it is necessary to free ourselves from the academy’s obsession with these narratives of ‘proliferation’—the idea that policy and academia should focus on the spread of nuclear weapons. Although there are certainly some insights to be gained from such a focused approach, there is the also the inherent difficulty of negotiating the twofold landscape of nuclear

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technology: Nuclear power, like many other so-called ‘dual use’ technologies, can be used for both peaceful and military purposes.\textsuperscript{32} What is more, the line between the two is not always distinct.\textsuperscript{33} The result is an overabundance of literature dealing with at most half the problem at a time. To use a biological analogy, trying to understand nuclear programs by only studying proliferation is like trying to understand a plant’s genetics by only examining the color of its petals. Although nuclear weapons may draw us in with their intensity and poetic allure, they are in fact only outgrowths of a larger interpretive puzzle.

In order to understand the greater puzzle, then, it is necessary to dig a little deeper. Specifically, we need to be able to go beyond proliferation, beyond domestic politics, realism, and norms, beyond what Indira Gandhi dubbed “the obvious,” in order to figure out the underlying inspirations that birthed the nuclear program as a whole.\textsuperscript{34} This is where \textit{postalgia} comes in. While reading this introduction, you may have noticed how little attention has been paid to that peculiar term \textit{postalgia}, despite its prominent place in the title of this piece. The reason for this exclusion is not because the author wishes to deceive the reader, or devalue the importance of this concept. Rather, it is because the idea of \textit{postalgia} is so essential to the understanding of the Indian nuclear program that it has been left to the end of this chapter, after we have already explored the other theoretical alternatives. Before we begin in earnest our exploration of Homi Bhabha, Jawaharlal Nehru and the birth of the Indian nuclear program, it is thus worth

\textsuperscript{32} For more on nuclear power as a dual use technology, see: Steven E. Miller and Scott D. Sagan, “Nuclear Power without Nuclear Proliferation?,” \textit{Daedalus} 138, no. 4 (September 1, 2009): 7–18.
\textsuperscript{33} Ibid.
\textsuperscript{34} Wolpert, \textit{A New History of India}, 416.
taking some time to address this one crucial concept, and by doing so acquire some familiarity with this thesis’ central theoretical argument.

**Postalgia**

What is *postalgia}? First and foremost, *postalgia* is a feeling. Like all feelings, it functions on a motive level, i.e. it causes individuals to act. In this limited regard, it is similar to realism, if only in so far as it can explain some of the latent desires that motivate us. Specifically, *postalgia* is the feeling of nostalgia—the melancholy or longing associated with affection for the past—except applied far more broadly. While nostalgia deals with tangible pasts, the yearning for things experienced, *postalgia* is concerned with that whole other world of imaginary or fictitious histories that are no less powerful. Whereas one may be nostalgic for something that occurred during one’s childhood, one can be *postalgic* for events that one has never experienced, pasts of which one has only heard tales, and futures that are yet to come. *Postalgia* is the *nostalgia for something that you have never experienced, or have not experienced yet.*

You should not be surprised if the concept of *postalgia* already seems familiar: While the use of the word to refer to both the unexperienced past as well as the imagined future is novel and distinguishes this thesis from the common notions of nostalgia in the literature, *postalgia* is not an entirely new term or concept.\(^{35}\) In fact, *postalgia* is very

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\(^{35}\) The word *postalgia* as used to describe a yearning for a fantastical future, but not the past, is employed in some works of management theory: Sierk Ybema, “Managerial Postalgia: Projecting a Golden Future,” *Journal of Managerial Psychology* 19, no. 8 (December 1, 2004): 825–41.; Chris Land and Scott Taylor, “The Good Old Days yet to Come: Postalgic Times for the New Spirit of Capitalism,” *Management & Organizational History* 9, no. 2 (2014): 202–19. Furthermore, scholars have unconsciously been describing aspects of *postalgia* for decades, often as a part of their analysis of nostalgia. See, for instance: Fred Davis, *Yearning for Yesterday: A Sociology of Nostalgia* (Free Press, 1979); Christopher Shaw and Malcolm Chase, *The Imagined Past: History and*
old. As human beings, we are all affected by *postalgia*. It permeates through our childhood games and lies dormant in our dreams. The identities that we often believe define us are usually just *postalgic* constructs of nationalist narratives or other shared histories—the idea that we once were great, that our ancestors ruled the world, or that our people have suffered, that we have been enslaved for thousands of years.

It is this aspect of *postalgia*—its ability to induce collective perceptions—that is one of the most fascinating, and one of the least explored, parts of history. How is it that these collected memories of events and times we never experienced can affect us so? Perhaps it has something to do with our essence as humans, some deep facet of our biology that forces us to group together in these imagined, if not exactly imaginary, spaces. A central concern of this thesis is to explore this fundamental part of our humanity as it relates to the nuclear program in India. Indeed, the effects of these *postalgic* spaces on the minds of historical actors are immense, and have yet to be suitably examined. And so, as we go forward in the analysis of Nehru and Bhabha, it is essential to keep this idea of *postalgia* at the back of our minds.

For now, however, let us redirect our focus back to the nuclear program and, in particular, two dates: The first is 1939, the year the Cambridge-educated Homi Jehangir Bhabha found himself stuck back in India due to the Second World War; The second is 1944, the year Jawaharlal Nehru, soon to be India’s first Prime Minister and at the time

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*Nostalgia* (Manchester University Press, 1989); David Lowenthal, *The Past Is a Foreign Country* (Cambridge University Press, 1985), to name just a few. Lastly, although there is no commonly accepted English equivalent, *postalgia* is somewhat similar to the Portuguese *saudade*—describing the longing that remains in the absence of that once loved—itself a form of unsubstantiated yearning. Since *saudade* is still, nevertheless, based on the real effects of a love that was experienced, it would technically be closer to the nostalgia than full blown *postalgia*. 
imprisoned by the British, wrote his epic history of India and the glory of its ancient past. This was also the year that Bhabha wrote to his uncle, the industrialist Jehangir Tata, to acquire funds for the Tata Institute of Fundamental Research—the first of India’s many centers dedicated to the atomic project.

These two dates mark the beginnings of what would become the Indian nuclear program. They represent not only turning points in the lives of these two men, but also India. The years that follow, up until 1966 when Bhabha died, set the stage for one of the most dynamic partnerships between science and politics India has seen. The first and second chapters of this thesis will deal with the early thinking of Bhabha and Nehru as they forged the nuclear program India still has today. Chapter one looks at Homi Bhabha and his transition from anglophile to patriot. It also examines how this transformation mapped onto the early development of the nuclear program. Chapter two puts this transformation into the context of Nehru’s postAlgic vision of India’s past, as described by his speeches and writings on history. The third and final chapters go on to analyze the nature of the postAlgic condition as it relates to India, the methodology of history and the potential uses of such theory in academia and policy. Chapter three focuses on postAlgia and historical memory more broadly, while the conclusion applies this lens back to the nuclear program and its wider policy implications. By the end of this thesis, the reader should be left with a new appreciation for the legacy of modernity, antiquity and postAlgia out of which arose the great historical bag of incongruities that is the Indian nuclear program.
Chapter I: Friendly Natives

Bhabha and Nehru: Two Postalgic Men

A. COMPTON: The Italian navigator has landed in the New World.
J. CONANT: How were the natives?
A. COMPTON: Very friendly.

--Coded conversation between physicist Arthur Compton and chemist James Conant to indicate the first successful self-sustaining, controlled nuclear chain reaction in Chicago, 1942.36

The Indian nuclear program was brought into existence by two men: Homi Bhabha and his political patron Jawaharlal Nehru. It was their combined vision of a new India at vanguard of the modern world that inspired its creation, and their perseverance and resourcefulness that enabled its fruition. In the next two chapters, we will examine their stories, to see how their views of history and the place of India led to the creation of the political-technical institution that is Indian nuclear power.

This first chapter will explore the figure of Homi Bhabha. We will look at his transformation from a Western to Indian modernist—embodied in his transition from technocratic Englishman to patriotic, Indian scientist—and consider how this intellectual journey may have mapped onto his relationship with the nuclear program. The next chapter will then reevaluate this transformation in the context of Jawaharlal Nehru and his postalgic beliefs about Indian history. By juxtaposing these two strands of intellectual thought, we will gain some insight into the complex, conceptual framework underlying these two thinkers as they created the nuclear program. What we shall find is that the tale of the Indian nuclear program is also the tale of the burgeoning

of a new Indian modernity, based on the intersection of Nehru and Bhabha’s visions for the new world.

The result will be an innovative way of thinking about where the demand for nuclear power originated in the first place. Put another way, if we think about the building of a nuclear program in terms supply and demand—the former dealing with the transfer of nuclear materials and knowledge—then this chapter will help us to understand the latter. Indeed, while there have been many comprehensive accounts of the former, it is the enigma of nuclear demand that constitutes the greater interpretive puzzle. Why was nuclear power so well received in India? What motivated the Indian establishment to acquire this foreign product for themselves? In short, when the navigator landed in the new world, why were the ‘natives’ so friendly?

Bhabha the Artist

In January 24th 1966, Air India Flight 101 crashed into Mont Blanc, killing every passenger on board. While the cause of the crash is shrouded in some mystery, the official report attributes the tragedy to a minor fault in the plane’s navigation systems.

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37 For a comprehensive history of the ‘supply question’—the logistics of how nuclear power came to India, as well as the fascinating stories of the many scientists and technicians involved—see: Robert S Anderson, *Nucleus and Nation: Scientists, International Networks, and Power in India* (Chicago; London: The University of Chicago Press, 2010). Also useful, though more theoretical in its outlook, is the classic: Perkovich, *India’s Nuclear Bomb: The Impact on Global Proliferation*. Both of these works provide excellent overviews of how the technical aspects of program came into being, and are especially useful as a means to see the complex scientific procedures and politics that went into so gargantuan a project.

38 This thesis’ focus on individuals is more thoroughly defended in later chapters. However, for now it is worth stating that, as this thesis concentrates on the motive forces and not the complexities of implementation, such a methodology is perfectly justified. While it is true that the implementation of the nuclear program was not solely the product of Bhabha and Nehru—there were many scientists, engineers and industrialists involved—as they were the two prime ideologues, they can rightly be treated as its true architects.

And so, and with no dearth of irony, it was a failure of Indian technology that turned out to be responsible for the death of India’s greatest technical mind and founder of the Indian atomic program, Dr. Homi J. Bhabha. To understand why nuclear power came to India when it did, it is essential to first understand this great man and what drew him to Indian nuclear power.

Indeed, as nuclear power changed the face of India’s lands and image, so too did its father, Homi Bhabha, undergo his own personal coming-of-age: the Indian-born, artist and anglophile who was forced to return from Cambridge to India during World War II, transformed, by the end of his life, into the very archetype of the patriotic Indian scientist, ever engulfed with passion for his country. Three stages of Bhabha’s life—artist, modernist and patriot—represent not only the trajectory of his personal journey, but also the arc of the program as a whole. The in-depth investigation of this trajectory that follows is thus an essential first step towards a more comprehensive understanding of institutions he set up, and hence the nuclear program in India.

At his core, the young Bhabha was an artist. Born in 1909 to a wealthy Parsi family, Bhabha was encouraged from an early age to cultivate an aristocratic appreciation for the fine arts. Indeed, before he embarked on his career as a scientist and technocrat, Bhabha was recognized for his exceptional painting ability, winning many awards and honors for his pieces. This part of his character, though often overlooked, is essential for understanding his later scientific work and hence the nuclear

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40 The Parsis are a very successful minority in India with distinct cultural and ethnic roots in Persia.
program. Homi Bhabha was fundamentally an artist whose most well-known medium just so happened to be nuclear science.

This passion for art encompassed all that the young Bhabha did. For instance, his younger brother Jamshed recalls how, even as a child, Bhabha was conversant in the symphonies of Beethoven. This thirst for Western music and culture only grew as he aged. According to Bhabha’s colleague and friend John Cockcroft, “by the age of sixteen, [Bhabha] was already familiar with the recorded symphonies, concertos, quartets and sonatas of Beethoven and Mozart, and of the recorded operas of Wagner and Verdi.” Bhabha would go on to spend much of his early twenties in concerts in England, listening to his favorite composers again and again. As he once claimed “the Ninth Symphony [of Beethoven] is sheer greatness, the sublimest and most colossal achievement of the human mind.”43 It was this artistic greatness to which Bhabha aspired in his subsequent life and work. He puts it best in a letter he wrote in 1934 to his intimate friend, Jessie Mayer:

[...] I cannot increase the content of life by increasing its duration, I will increase it by increasing its intensity. Art, music, poetry and everything that I can do have this one purpose – increasing the intensity of my consciousness and life.44

Noticeably missing from Bhabha’s rich artistic repertoire at this stage was any mention of Indian art. Growing up in Bombay in the early 20th Century, he certainly must have had access to the art of his ‘homeland;’ its omission from his own narratives

43 Venkataraman, Bhabha and His Magnificent Obsessions, 189.
44 Homi Jehangir Bhabha, “Letter from Homi Bhabha to Jessie Mayer,” 1934, TIFR Archives. Also quoted in: Venkataraman, Bhabha and His Magnificent Obsessions, 203.
suggests a level of anglophilia that was at variance with the nationalistic discourse at the time among thinkers like Nehru. Indeed, for the young Bhabha, it is clear that art, music and poetry primarily meant Western art, music and poetry. It was the great classics of the West that inspired him, and its figures—Beethoven, Mozart, Shakespeare—that made up his personal role models.\(^45\)

This personal affinity with artists of the Western canon came strongly to bear when Bhabha eventually chose his ‘medium.’ In a letter to his father, written in 1928—a year after he had begun his degree in Cambridge University’s Engineering tripos—he professed his true ‘artistic’ calling:

I am burning with a desire to do physics. […] I hear you saying ‘But you are not Socrates or Einstein’. No – and that is what Berlioz’s father said to Berlioz. He called him a useless musician when he was young – Hector Berlioz who is now accepted as one the world’s greatest geniuses and France’s greatest musician. […] It is no use saying to Beethoven ‘You must be a scientist for it is a great thing’, when he did not care two hoots for science; or to Socrates ‘Be an engineer; it is the work of an intelligent man’. It is not in the nature of things. I therefore earnestly implore you to let me do physics.\(^46\)

Not without some hubris, the young Bhabha saw himself on a platform with the great, creative minds of the West. Physics was to him as music was to Beethoven. It was the medium through which he would channel his true passions. Unlike engineering, with its lowly, more earthly aspirations, physics, and specifically the study of cosmic rays, allowed Bhabha to ruminate on what he might have seen as the greater mysteries of existence—a pursuit more fitting for a true gentleman. It was through this final switch to a doctorate in physics, after a bachelor’s degree in Mathematics, that a young,  

\(^{46}\) Venkataraman, *Bhabha and His Magnificent Obsessions*, 4.
industrial aristocrat, born in British India, found his artistic niche and came to consider himself a part of the Western intellectual and creative tradition. It was this Bhabha who came back to India in 1939: an artist-scientist with a distinctly occidental aesthetic.

**Bhabha the Modernist**

When the war broke out in 1939, Bhabha the anglophilic, artist-scientist found himself stuck in India. While Indian accounts today often like to portray his return to the motherland as a product of his deep-felt love for the country, his own explanation is far less patriotic:

> It was while I was on holiday in India in 1939 that the war broke out and stopped my return to my job in Cambridge. For some time after that, I had the idea that after the war I would accept a job in a good university in Europe or America.  

Judging by his own description, Bhabha’s decision to stay in India was more pragmatic than ideological. In fact, had a post-doctoral position in a “good university” been forthcoming, it seems like he may not have stayed at all. Bhabha’s strong desire to be in Europe or America, although inconceivable to some of his more patriotic admirers, should not be surprising. As we have already seen, Bhabha was, at least at this stage, an unabashed anglophile: That this love the West should extend beyond just its art is only to be expected.

Indeed, more than just an increased consciousness of his place within the Western, artistic canon, Bhabha brought to India his appreciation for that other great,

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48 Ibid.
occidental invention: modernity.\textsuperscript{49} Researching for his doctorate in the Cavendish Laboratory at Cambridge, the pinnacle of British science, Bhabha had been granted access to this apothecosis of Western progress, and hence power. We can only imagine how gratifying those Cambridge days must have been for him: he could remove himself from the shackles of his dark skin and Indian birth, and join the relatively egalitarian universalism of the Western scientific community. Here was the engine of empire and power, and there was Bhabha, close enough to feel its heat.

The return to India was thus doubly crippling for Bhabha. Not only did it cut him off from the source of his artistic passions, but also his purpose as a scientist on the forefront of the modern world. Thanks to his wealthy uncle, Bhabha managed to find a position at the Indian Institute of Science as a reader.\textsuperscript{50} Nonetheless, it was no Cambridge or Princeton. Indian science, compared to that in Europe and America, was underdeveloped and underfunded. Bhabha, so used to being at the vanguard of progress, now found himself at the rear. It was at this point, when things looked the most bleak, that Bhabha had his most important realization: India was not empty page, but a blank canvas—one that was just waiting for a skilled artist to fill it. That artist was to be Bhabha, and the picture he painted would become the Indian nuclear program.

And so, Bhabha decided to bring the modernity he had seen in the West to India. Motivated by this nostalgia for his time in England and the great Western artists of his

\textsuperscript{49} It is not within the scope of this thesis to be able to explore the fascinating idea of modernity in the early 20\textsuperscript{th} Century. The term is used here in its most broad sense to convey general notions of progress and change commonly used at the time in Europe.

youth, Bhabha projected a future for India that would surpass them all. In 1944, he laid out his vision in a letter to the Sir Dorab Tata trust.\textsuperscript{51}

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\ldots\text{in the last two years I have more and more to the view that provided proper appreciation and financial support are forthcoming, it is one’s duty to stay in one’s own country and build up schools comparable with those that other countries are fortunate in possessing.} \ldots\text{The scheme I am now submitting to you is but an embryo from which I hope to build in the course of time a school of physics comparable with the best anywhere.} \ldots\text{[The school will] be of lasting benefit to India.} \textsuperscript{52}
\]

The plan was for an institute of physics in Bombay that would focus on training a new generation of Indian nuclear scientists. The funding was granted and Bhabha’s vision came to fruition in 1945 in the form of the Tata Institute of Fundamental Research. This was the start of Indian nuclear program. Nonetheless, for Bhabha, it was only a small step towards his greater vision for India’s development as a modern state.

\textbf{Bhabha the Indian}

The years that followed, until Bhabha’s death in 1966, marked one of the most dynamic periods in the history of Indian science and technology. 1946 saw the establishment of the Atomic Energy Committee, an elite scientific body that two years later would morph into the Atomic Energy Commission (AEC). Chaired by Bhabha, managed by Jawaharlal Nehru and responsible for all of the new country’s atomic interests, the AEC became the primary driver of Indian nuclear policy. In 1947, at the midnight hour, India achieved its independence and changed forever. It was at roughly the same time that Bhabha started to undergo his own personal transformation. While

\textsuperscript{51} This also happened to be owned by his wealthy uncle, J.R.D Tata.
\textsuperscript{52} Bhabha, “Letter from Homi Bhabha to Sir Dorab of Tata Trust.”
still inspired by the progress he had seen in the West, Bhabha’s modernism began to take on a more Indian flavor.

This reorientation started with the simple desire to compete on an international level. In 1948, for instance, Bhabha stated:

> If India did not wish to fail even further behind the industrially advanced countries of the world, it would be necessary to take more energetic measures to develop this branch of [nuclear] science and appropriate larger sums for the purpose.⁵³

Unlike the 1944 letter to the Tata trust, the benefit to India was not just incidental to the advancement of science: Bhabha wanted to accelerate the advancement of the nuclear program, not simply for the sake of progress, but for India. This inversion of Bhabha’s previous motivations was indicative of a new frame of mind, one that was fundamentally more nationalist. For Bhabha, science had ceased to become a form of art, the rewards of which were purely aesthetic, but rather a tool that could be used to overcome the inferiority in which India found itself.

Bhabha’s new love affair with India continued with the 1954 building of the Tata Institute’s main campus in Colaba. By this point, Bhabha had started to develop a taste for Indian art and music, including Carnatic vocalists like Ariyakudi Ayyangar, M.S Subbalakshmi and Madurai Mani, and the then obscure artist Amrita Sher Gil. He brought this newfound admiration of Indian artwork to bear on the architecture of his new center.

In planning the buildings of the Institute the Council took the view that the latest and best ideas should be incorporated. Accordingly, a noted

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American firm of architects, Messrs Holabird and Root and Burgee of Chicago were appointed as the Designing Architects, as this firm had considered experience of tropical building [...]. In order to utilize the services of Indian architects to the maximum extent possible [...] it was decided to appoint Messers Master, Sathe and Bhuta, who had designed and built the National Physical and National Chemical Laboratories, as the Executing Architects. [...] The foundation stone of the new building will be laid by the Prime Minister on 1 January 1954.  

Although Bhabha thought the Americans were best suited for the task, his inclusion of the Indian architects reveals a new desire to bring some aspect of India into the building. Indeed, envisioned by Americans, constructed by Indians and sanctioned by Prime Minister Nehru, the institute of Colaba had become an analogy for the program as a whole.  

And so, while his role as a modernizer drove Bhabha to choose the “latest and best” ideas for the nuclear project, his more nationalistic desires seem to have nuanced this modernity to fit an Indian form.  

At the same time, Bhabha began to think more deeply about Indian history. In a move that represented a reversal of the anglophilic aesthetics of his youth, he proposed that the institute “might render useful service to this country by carrying out research in the history of Indian Science,” in order that the “contributions of India and the East to the progress of science in past ages and their relation to science are to be systematically investigated and appreciated in their proper historical perspective.”  

It was here that Bhabha’s conceptions of modernity really seem to have shifted. If India was once an [...]

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55 Incidentally, another reason Bhabha stated for hiring Indian architects was the considerably lower labor costs.
56 Bhabha, “Historical Note on Tata Institute of Fundamental Research,” 17.
57 Ibid., 23.
advanced state, then why should the modernist limit himself to just the Western type of modernity? Perhaps there was an Indian modernity, based on its own past, that could suit India better?

As if in answer to this call for an Indian modernity, 1956 saw the successful operation of India’s first reactor, APSARA—named for the beautiful nymphs of ancient Indian mythology. This was followed by the Canadian-Indian Reactor, U.S (CIRUS) in 1960. Although both of these facilities were products of multinational efforts, they came to life on the backs of numerous Indian scientists and engineers, each trained domestically. With these two milestones, Bhabha had succeeded in bringing domestic Indian science into the modern world. Moreover, he had done it in an ‘Indian way,’ relying on the country’s own scientific potential. As his colleague at the time, Mambillikalathil Menon, would later say of Bhabha: “His aim was […] to grow science indigenously, as a way of life in the midst of all that was good and great from the past, a science which would bear the imprint of traditions, the cultures and natural gifts of the Indian people.”\(^{58}\) Bhabha, suddenly nostalgic for a past he had never experienced, decided to recreate it in the future he would never live to see. Moreover, just like the great civilizations of the past, the new India would look inwards, and not to foreigners, to gather its strength.

This notion of self-sufficiency based on Bhabha’s *postalgia* for India’s past greatness represents the final stage in Bhabha’s transformation from Western to Indian modernist. At Nehru’s funeral in 1964, Bhabha declared that a “plant set up by foreign

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assistance hardly made the country an advanced and industrialized nation, any more than using a car or flying an aeroplane purchased from abroad. It is only when India has acquired the ability to design, fabricate and erect its own plants without foreign assistance” that it will “have become a truly advanced and industrialized country.”

This intense nationalistic sentiment was a far call from that of the anglophilic Bhabha who was deciding which ‘good’ university to attend in Europe. Indeed, as the Tata Institute—his Tata Institute—declared at the grieving ceremony for his death:

The hearts of all present are too full to find expression that would be truly fitting and appropriate for this most gifted son of India, whose splendid vision and imagination were ever at the service of the country. […]

The resolution went on to praise not only his “exemplary patriotism” but also his “exalted vision” to recreate a “nobler India.” Part of this depiction can be explained by the desire to memorialize Bhabha’s patriotism for the ages. Nonetheless, and as we have seen, the description is not too far off the mark. To use a colloquialism familiar to most Indians today, by the time he died in 1966, it seems that Bhabha had cast aside his mantle as an angrez ‘Englishman’ and instead had become desi, a ‘true’ Indian.

**Conclusion**

This chapter examined Homi Bhabha’s transition from artist to modernist to patriot. This arc from angrez to desi, ‘Englishman’ to ‘Indian,’ also defined the nature of the program itself: arriving in India as a foreign product, it was eventually incorporated into a new vision of Indian modernity, based on Bhabha’s *nostalgia* for

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60 *Resolution in Memory of Homi J. Bhabha* (Tata Institute of Fundamental Research, Colaba, Bombay 5: TIFR Archives, 1966). Italics are mine.

61 Ibid.
India’s past. And yet, where did this *postalgia* come from? What were the characteristics that defined it, and what did they mean to incorporate them into the new, Indian modernity? To answer these questions, the next chapter will add in the role of that second ‘friendly native,’ Jawaharlal Nehru. By examining his *postalgia* for India’s glorious past, we will gain some insight into where this Indian modernity originated and the place of the nuclear program within it.
Chapter II: Nehru’s Great Discovery

Caged Visions

Time seems to change its nature in prison. The present hardly exists, for there is an absence of feeling and sensation which might separate it from the dead past. [...] We [thus] try to find some sustenance for our starved and locked-up emotions in memory of the past or fancies for the future.

--Jawaharlal Nehru, writing from Ahmadnagar Fort prison in 1944.62

In April, 1944, a month after Homi Bhabha sent the letter to the Tata trust and started the Indian nuclear program, Jawaharlal Nehru and eleven of his fellow revolutionaries were arrested for protesting the British tax on salt. While it seemed to some British officials at the time that they might finally have crippled the All-India Congress Party, this prediction turned out to be disastrously misguided—at least for the Raj. This was Nehru’s ninth time in prison; He was no debutante. After five months in the Ahmadnagar Fort, he had not only found the time to clarify his deeper revolutionary sentiments, but had written them down in a book that would be read all over India for generations to come. This extemporary masterpiece, named The Discovery of India and concerned with Nehru’s personal journey to find the ‘spirit’ of India, set out his vision for the India’s future as dictated by his nostalgia for its past. By examining this work in depth, this chapter will present Nehru’s views as he saw them, and hence provide a unique avenue into the mind of the man who, along with Bhabha, would transform India into a modern nuclear power.

Indeed, it is no coincidence that Bhabha’s transformation from Western to Indian modernist occurred only after 1944, post his contact with Nehru and after the writing of *The Discovery of India*. For instance, we know that, by the early 1950s and especially after Independence in 1947, Bhabha and Nehru had a close personal relationship. This intimacy is evident if you look at any of their letters to each other, in which they unfailingly address each other by the first name, or more commonly, just *bhai*—‘brother.’ That this intimacy extended beyond just the emotional to the intellectual-emotional space that makes up Nehru’s thoughtful patriotism is certain, and could help explain the subsequent evolution of Bhabha’s own nationalistic thinking.

Nonetheless, it is neither possible nor necessary to prove that this link between Nehru and Bhabha had a transformative effect on Bhabha. For our purposes, all that is important is to note that what Nehru believed, as Prime Minister and patron of the nuclear program, had a substantive and direct effect on the early development of Indian nuclear power, independent of its effect on Bhabha. Indeed, if Bhabha was the nuclear artist, whose personal journey and transformation mapped onto the artwork that was the Indian nuclear program, Nehru was his patron—whose ideology and will, as described in *The Discovery of India*, shaped the program’s purpose and character. By analyzing Nehru’s beliefs about India’s ancient glory and subsequent decline, the following sections will expose Nehru’s scientific vision for India, and its budding nuclear program.

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63 Bhabha and Nehru had met once before, however, while traveling together aboard the same ship in 1937. See: Venkataraman, *Bhabha and His Magnificent Obsessions*, 178.
65 Though this thesis *claims* it almost certainly did.
The Discovery of India

The India that Nehru discovered began its life somewhere between 3000 BCE and 4000 BCE in the Indus river valley, in northwest India.\footnote{Based on the data we have today, this is likely to be an overestimate. Nonetheless, since this chapter deals with Nehru’s perceptions of Indian history and not what that which is commonly accepted by scholars today, it is unnecessary to point such inaccuracies out as we go on in our analysis. For a concise overview of what the academy generally accepts today about Indian history, see: Wolpert, A New History of India.} This civilization, the knowledge of which Nehru gleamed from writings on the then recent excavations at Mohenjo-Daro and Harappa, possessed two qualities. The first was age: Nehru’s India was an ancient country even then, one whose roots extended as far back as any other of the so-called first civilizations. “I stood on the mound of Mohenjo-Daro in the Indus Valley,” he writes, “and all around me lay the houses and streets of this ancient city that is said to have existed over five thousand years ago; and even then it was an old and well-developed civilization.”\footnote{Nehru, The Discovery of India, 50.}

Crucially, it was the existence of an old civilization and not just an old peoples that defined India. For Nehru, the spirit of India across the ages meant the spirit of a society, and not just a race of peoples: “I think that at almost any time in recorded history an Indian would have felt more or less at home in any part of India, and would have felt as a stranger and alien in any other country […].”\footnote{Ibid., 62.} India was a social construction, something that could and did transcend race, caste, religion and creed, as it meandered through the ages. Moreover, this social construction could trace its roots back to the dawn of civilization itself: “India must henceforth be recognized […] as one the most important areas where the civilizing processes were initiated and developed.”\footnote{Ibid., 70. Nehru is paraphrasing the Orientalist John Marshall here.}
context of the ‘civilizing missions’ used to justify imperial processes at the time, India could thus not only rightfully claim to be exempt, but also put itself forward as a pioneer and model for the process of civilization itself.

It is this notion of ancient India as a model of for what civilization should be that constitutes the second quality that defines Nehru’s India. The Indus Valley civilization, according to Nehru, was one of the most advanced in the world:

There is nothing we know of in prehistoric Egypt or Mesopotamia or anywhere else in western Asia to compare with the well-built baths and commodious houses of the citizens of Mohenjo-Daro. In these countries much money and thought were lavished on the building of magnificent temples for the gods and on the palaces and tombs of kings, but the rest of the people seemingly had to content themselves with insignificant dwellings of mud. In the Indus Valley the picture is reversed and the finest structures are those erected for the convenience of the citizens.\(^70\)

Not only is the India Nehru portrays here sophisticated technologically, but also socially. We have here the beginnings of a motif of sorts. For Nehru, there is an important distinction between societies, like those of Egypt and Mesopotamia that he saw as oppressive or socially backwards, and ancient India, which used the fruits of its progress to cater to the needs of its people. This populist, progressive spirit permeates into all aspects of Nehru’s India. Ancient India, he claims, “made considerable technical progress in the arts and amenities of life, creating not only things of beauty, but also the utilitarian and more typical emblems of modern civilization—good baths and drainage systems” for its people.\(^71\)

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\(^70\) Ibid., 71.
\(^71\) Ibid., 72.
For Nehru, it is this marriage of technology and society, art and utility found in the Indus Valley civilization that formed “the precursor of later cultural periods in India.” He points, for instance, to the “powerful and highly developed” Maurya Empire of 321 BCE, which used its technological advances to provide its citizens with “sanitation and hospitals,” complex systems of “weights and measures,” and innovations such as “irrigation” and legal stipulations on the equal “rights of women.” What makes the Maurya Empire uniquely Indian, for Nehru, is the fact that although it was a powerful empire enveloped by “the growth of luxury,” this luxury prescribed itself upon all members of the populace and not just the rulers. The most advanced society was thus the one which could provide best for its people.

This social and moral sophistication found its historical zenith, for Nehru, in the rule of Ashoka, last of the Maurya dynasty. Ashoka, whose symbol of the four lions upon an abacus was adopted as India’s official emblem in 1950, is best known for his dramatic conversion to Buddhism after the punishing defeat of his enemies at Kalinga. “Unique among the victorious monarchs and captains in history,” writes Nehru, was “this astonishing ruler” who “decided to abandon warfare in the full tide of victory.” Indeed, after the battle of Kalinga, Nehru states that Ashoka “devoted himself to the spread of Buddha’s teaching, to righteousness and goodwill, and to public works for the good of the people.” This depiction of Ashoka as powerful, peaceful and paternalist,

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72 Ibid., 70.
73 Ibid., 125.
74 Ibid., 126.
75 He dates the start of this period to 273 BCE
76 Nehru, The Discovery of India, 132.
77 Ibid., 133.
represents for Nehru the highest advance of a ruler and the technical, social and moral strength that defines the spirit of India. The result is a people imbued with a “quiet confidence” and “a glow of pride” that manifested itself in an “intense joy in life and nature, a pleasure in the act of living, the development of art and music and literature and song and dancing and painting and theatre, and even a highly sophisticated inquiry into sex relations.” In other words, the very form of what civilized life should be.

Decline and Postalgia

Nonetheless, Nehru’s depiction of the golden ages of India’s early history is not a simple tale of glory. In fact, one of the central themes of the work as a whole is the notion of decline: India was once great, but is no more. Specifically, India lost the technological edge that made the Indus Valley peoples and Maurya Empire so powerful:

[India] fell behind in the march of technique, and Europe, which had long been backward in many matters, took the lead in technical progress. Behind this technical progress was the spirit of science […]. New techniques gave military strength to the countries of western Europe, and it was easy for them to spread out and dominate the East.

Nehru is explicitly referring here to the Industrial Revolution in England and the rise of the mighty imperial powers in the late 18th and 19th Centuries. However, his conclusion here is one that he applies more generally to Indian history. While “there was and has been no such dramatic collapse of Indian civilization [as in Rome],” he writes, there was still “an undermining, in repeated wars and crises, of a proud and advanced civilization”—resulting in what Nehru calls “a progressive decline.” This notion of the progressive decline is essential: The India of old did not vanish; it diminished.

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78 Ibid., 222; Ibid., 82.
79 Nehru, The Discovery of India, 54.
80 Ibid., 81; Ibid., 225.
What India did not lose, and what Nehru believed kept its greatness from disappearing, was the essence of moral, social and political sophistication that made it truly civilized:

> It is not some secret doctrine or esoteric knowledge that has kept India vital and going through these long ages, but a tender humanity, a varied and tolerant culture, and a deep understanding of life and its mysterious ways.\(^{81}\)

Nehru’s India was the country in which power embraced morality, where advance translated into mass empowerment. While conceding that “no people, no races remain unchanged” and that India, in particular, “was changing and progressing all the time,” Nehru asserts firmly that this social-moral cultural essence represents an unchanged Indian “individuality, which has been her traditional feature throughout her history.”\(^{82}\)

It is the connection to this moral and social individuality latent within India that Nehru believed to have disappeared by 1944. Although India was still morally and socially advanced in essence, it was held back from exercising its individuality by its current lack of power or will. As Freud might say, India was repressed.

And so, trapped within in his cell, Nehru dreamed of the past when India was powerful—when India could let its moral and social essence, its individuality, shine. It is in this specific moral and social context that Nehru yearned for the golden days of the Indus Valley and the Maurya empires. His *nostalgia* for this past he had never experienced was not for simply for power, but Indian power, moral power—what he

\(^{81}\) Nehru, *The Discovery of India*, 151.
believed to constitute the unified essence of India. This essence contrasted strongly with the situation he found himself in with the British—a powerful civilization that, as he saw it, had abused its technological strength in order to imprison him physically and colonize him spiritually. The result was an intensified, emotional reaction to the Indian history he had laid out. “No longer merely an intellectual conception,” he writes, “[the unity of India became] an emotional experience which overpowered me.”

The consequence of this overwhelming postalgic emotion was to ignite a deep passion within Nehru. Indeed, for him, it was not enough to simply find “consolation in past greatness”—something he saw as “a foolish and dangerous pastime in which many of us [from countries under foreign domination] indulge.” Rather, his ‘discovery’ of India was a call to action. Tapping into the postalgic emotions conveyed by this “vision of five thousand years” gave Nehru “a new perspective, and the burden of the present seemed to grow lighter.” Such energy, and yet this change was triggered by something that Nehru had never experienced—by something that, for all we know, may never have existed in the way he saw it. This is the power of postalgia, history’s agile messenger. As Nehru himself acknowledged:

[... ] imagined history, mixture of fact and fiction, or sometimes only fiction, becomes symbolically true and tells us of the minds and hearts

83 Nehru, The Discovery of India, 59.
84 Ibid., 81.
85 Ibid., 52.
86 We will examine the epistemology of history and postalgia more closely in the next chapter. For now, the reason Nehru can properly be said to be postalgic here has to do with the fact that historical knowledge is inherently subjective, and so any feeling inspired by events that Nehru does not claim to have experienced is rooted in his individual perceptions, and not access to some higher, objective knowledge about the past. It therefore matters little how much of what he believes is based on truth, since all such historical beliefs are, at some level, imagined constructs—and Nehru’s particularly so.
and purposes of the people of that particular epoch. It is true also in the sense that it becomes the basis for thought and action, for future history.\textsuperscript{87} It is fortunate for us that the imagined history of India’s glorious past affected Nehru so greatly. For it is out of his efforts to bring India’s modernity in line with what he saw as its underlying, moral essence that arose the distinct character and purpose of the Indian nuclear program.

**Science, Progress, and the Nuclear Program**

And so what was the purpose the nuclear program as Nehru saw it? The answer, in a nutshell, is power. This power was not just nuclear power, but moral power, the kind that Nehru believed to define India. Indeed, the nuclear program represented the pinnacle of scientific advance, the technological sophistication needed to release India from its repression, and allow it to display its inner moral essence. Moreover, it is this desire to bring the moral essence of India into its burgeoning modernity that defined the character of the nuclear program: Like Ashoka, who “decided to abandon warfare in the full tide of victory,” a nuclear India would not only display India’s might, but also its restraint.\textsuperscript{88} Nonetheless, to understand this dual nature of strength and restraint that characterized Nehru’s nuclear power, we must first understand his relationship with science more generally. What did science represent to Nehru? How did it relate to India’s past? Only after we have answered these questions can we establish what role nuclear power played in Nehru’s greater scientific vision for India.

\textsuperscript{87} Nehru, *The Discovery of India*, 102.  
\textsuperscript{88} Ibid., 132.
For Nehru, science was an international force that acted almost independently of any particular nation’s will: “There can be no doubt,” he wrote, “that India will be industrialized and will take on progressively more and more the appearance of a modern, industrialized society.” The “march of science,” as he would later call it, was thus inevitable. Scientific progress simply happened, and those who failed to beat in time with its drum would be “left behind.”

Nonetheless, science was not a guarantee of all progress. For Nehru, true advance meant also a moral and social advance, a tenet he held for most of his life. To be truly ‘developed,’ a country had to embody the qualities of power in a way that, as in the Indus Valley, benefited its citizens just as much, if not more, than its rulers. As he wrote in 1933, “the great increase in [scientific] knowledge in the world does not necessarily make us better or wiser. We must know how to use that knowledge properly before we can fully profit by it.” This sentiment, familiar if you recall his depiction of Ashoka, was echoed in a speech he gave twenty-six year later: “Those high priests of science must also realize that there is something as a social consequence of their scientific work and discovery, something very big,” he said, for “even in science some moral issue involved […].” It was thus up to the country’s scientific elites—the “grand

89 Ibid., 70.
91 Jawaharlal Nehru, “Speech Moving the Atomic Energy Bill in the Constituent Assembly (Legislative)” (Delhi, April 6, 1948). As quoted in: Nehru, The Essential Writings of Jawaharlal Nehru, I:526.
92 Nehru, Glimpses of World History, 867.
priests” of science and science policy—to make sure science was being used for the right reasons:  

“Science has two faces like Janus: science has its destructive side and its constructive, creative side. […] Hiroshima became a symbol of this conflict and, in spite of all the decisions of the Atomic Energy Commission of the United Nations […], the doubt remains in one’s mind as to where we are speeding.  

For Nehru, himself a grand priest of atomic policy, the use of the atomic bomb as a weapon was the wrong reason to advance nuclear science and thus a sign of backwardness.

It is to find the ‘right reasons’ for scientific progress that Nehru looked back to India’s past. His *postal gia* for the moral spirit of India, motivated him to look to see how he could restore it in India’s future:

[…] if we were going to build the house of India’s future, strong and secure and beautiful, we would have to dig deep for the foundation.  

Although he acknowledged that “industrialization is something new to the world’s history,” Nehru believed that modernity was not:  

As he wrote, “there are [those] who talk glibly of modernism and modern spirit and the essence of western culture, and are at the same time ignorant of their own culture. […] Naïve and shallow and yet full of their own conceits, they live […] an artificial life which has no living contacts with the culture of the east or of the west. […] National progress can, therefore, neither lie in a

94 Ibid.
96 Nehru, The Discovery of India, 59.
97 Ibid., 151.
repetition of the past nor in its denial. New patterns must inevitably be adopted but they must be integrated with the old.”

This idea of integrating the old with the new, antiquity with modernity, was the heart of the Indian modernity that Nehru and later Bhabha adopted to develop the nuclear program. Nuclear power, done properly, would represent not only the India’s advanced future, but also its moral past.

It is this spirit of Indian modernity—a juxtaposition of the old and new, the moral essence of India with its need for rapid industrialization—that particularly endeared science to India. In Nehru’s eyes, there was no doubt that India, of all countries, was best equipped to handle the moral and social responsibility that came with scientific progress:

Science has dominated the western world and everyone there pays tribute to it, and yet the west is still far from having developed the real temper of science. It has still to bring the spirit and flesh into creative harmony. In India in many obvious ways we have a greater distance to travel. And yet there may be fewer major obstructions on our way, for the essential basis of Indian thought for ages past, though not is later manifestation fits in with the scientific temper and approach, as well as with the internationalism. It is based on a fearless search for truth, on the solidarity of man, even the divinity of everything living, and on the free and co-operative development of the individual and the species, ever to greater freedom and higher stages of human growth.

The nuclear program must, therefore, be seen in the context of India’s unique history and moral essence. As the pinnacle of science, it would herald India’s return to the stage of technical progress. As a source of power—both in terms of energy and status—it would represent a return and reincorporation of the golden ages of India’s

98 Ibid., 517.
99 Ibid., 515.
past. And finally, as a source of great responsibility, it would allow India to demonstrate its restraint, and thus allow it to once more reconnect with its ancestral moral essence.

**Conclusion**

This chapter traced Jawaharlal Nehru’s thought through his 1944 *The Discovery of India*, as well as his subsequent speeches, in order to demonstrate how his *postalgia* for India’s past led to a distinctive view on what constituted Indian progress in the modern world. The resultant combination of antiquity and modernity formed for Nehru the distinctive Indian type of progress that would define the purpose and character of the nuclear program in India. In the next chapter we will examine in more depth the idea of *postalgia* as a theoretical concept and its role in the study of history.
Chapter III: Memory and Postalgia

**Postalgia Revisited**

What is *postalgia*? You may recall the definition provided in the introduction: *postalgia* is *nostalgia for something that you have never experienced, or have not experienced yet*. This is, however, only a basic form. In the last two chapters, for instance, we saw how *postalgia* worked as a feeling—something that acts through emotions. It was this context that we could say that Nehru was *postalgic* for the moral essence of India’s past, or that Bhabha was *postalgic* for future of India he saw in his mind. However, what has not yet been explored is the notion of *postalgia* as a form of memory, a way of conjuring the past and connecting to histories, real and imagined. It is this aspect of *postalgia*, and its associated use as a theoretical tool in the study of history, that will make up the focus of this chapter. By the end, the reader should have a proficient grasp of this new, theoretical lens as well as an appreciation for its application, not only in understanding the origins of India’s nuclear program, but also history more generally.

**Memory and the ‘Objective Correlative’**

What is memory? By far the best modern guide we possess is the French novelist Marcel Proust. In his famous mental exploration of memory and longing—À *La Recherche du Temps Perdu*—it is the taste of a madeleine cake with tea that propels the protagonist back to his childhood in the French town of Combray, and the reader with him. The idyll of that time and place, where the author recalls his early
development and coming of age, is brought to life all at once, compressed into a single moment of eating.\textsuperscript{100}

This connection of the past to the present, like the connection of Combray to Proust, is one that appears to permeate through material objects. Actions affect objects, and in so doing, ‘imprint’ themselves upon them. Combray, with its old grey house, garden and bedroom, became ‘imprinted’ upon a madeleine, which was subsequently accessed by Proust in this act of reminiscence. Memory, in this context, is a reaction of a subject—in this case Proust—with an object—the madeleine—the effect of which is the series of images, feelings and thoughts associated with the past, and unlocked when the object was reintroduced.

Proust’s depiction of memory here is what this thesis will dub ‘basic objective memory,’ the personal effect of a past experienced and subsequently unlocked through an object. Why this type of memory is called ‘basic’ has to do with the nature of the past as something that actually happened, or at least is claimed to have happened, to the subject. It is not quite the type of memory that Nehru describes in The Discovery of India. And yet, as any scholar of Proust can attest, this reminiscence is far from an accurate portrayal of Proust’s life. Indeed, even in the smallest of recollections—the taste of a madeleine—brings with it a rich, supplemental narrative of associated truths, half-truths and outright lies. Even in the case of basic objective memory, the remembered whole is far greater than the sum of its parts.

Indeed, there must be an additional component to memory that transcends the direct object stimulus—an associated mental object that is unlocked as well. One theory that describes just such a process is that of the “objective correlative” put forward by T.S Eliot in his analysis of Shakespeare’s *Hamlet*:

The only way of expressing emotion in the form of art is by finding an “objective correlative”; in other words, a set of objects, a situation, a chain of events which shall be the formula of that particular emotion; such that when the external facts, which must terminate in sensory experience, are given, the emotion is immediately evoked.\(^1\)

The objective correlative is the product not only of an object, like the madeleine, but also the sum of the ‘mental’ objects, stored emotions and the like, that are ‘co-relative’ to it. While Eliot is referring specifically to the emotional experience conveyed through a unique *arrangement* of artistic choices in a play or narrative—the plot choices, props etc.—the objective correlative can equally apply to a narrative like that of the past. For instance, consider the display of Hitler’s Mercedes limousine in the Canadian War Museum. While the object has limited practical value as a means for transportation, it still contains the correlative associations of everything that Hitler and the Nazis represented during World War II—it is an objective correlative of the mass physical and emotional fallout of the war: the rise of tyranny; the destruction of Europe; the death of six million Jews. Museums like the Canadian War Museum, in this context, are collections of objective correlatives. Moreover, because they are organized and not simply randomized or uncategorized material dumps—like some archives—museums

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are themselves objective correlatives, designed to leave the visitor with a specific narrative experience, greater than the sum of its parts.

Combining Proust’s experience of object-related memory with the theory of the objective correlative gives us an excellent insight into basic objective memory. However, basic objective memory relies on the fact that exterior objects exist and that they can connect to experienced pasts. What happens to someone who, for instance, visits the museum in Canada with no knowledge of World War II? How about the WWII veteran who has no object to relate to except the memories in his head? The answer will lead us to two new types of memory: ‘basic subjective memory’ and ‘constructed memory.’ These two types of memory form the basis of all historical study. Postalgia, as we shall see, is a useful theory because it allows us to connect these two forms of memory, and so better understand history.

**History and Postalgia**

To being our analysis, let us take another look at the process of basic objective memory as described by Proust. While it may seem trivial to make explicit, it is important to recall that the madeleines served to the protagonist during his childhood in Combray were different objects to the one eaten by the author many years later. The reaction Proust had was therefore not technically to a particular French cake but to ‘madeleineness.’ And yet, this ‘madeleineness’ was inextricably linked to the physical object of a madeleine. In other words, the material—the original madeleine—imprinted the spiritual or ideological ‘madeleineness’ onto the mind of the protagonist. The object Proust was reacting to was thus actually the ‘madeleineness’ in his mind and not the madeleine itself. Since the object of this type of basic objective memory is contained in
the mind of the subject, we might properly call this aspect of the process ‘basic subjective memory.’

‘Basic subjective memory’ is the root of all narrative. When it functions under the stimulus of an object, as with the madeleine, it becomes the basic objective memory discussed earlier. However, it does not necessarily require an exterior object to be ‘unlocked.’ Indeed, although basic subjective memories can be formed from the imprinting of an external object or experience, they can also be formed in the absence of any external stimulus, as in the case of a purely or partly imaginative construct e.g. a fiction or a lie. This the main type of memory Nehru had access to in prison. When a basic subjective memory is translated from one subject to another, or from one subject to the exterior world, it becomes a single narrative event. In other words, a story.

When a basic subjective memory is shared between two or more subjects, it becomes a ‘constructed memory.’ Constructed memories are simply shared stories. They are ‘constructed’ because they take parts of basic subjective memories and put them together. When constructed memories are accepted based on their connection to common objects, i.e. evidence, we call this ‘history.’ This holds even in the case where the objects are not directly experienced by one or more of the subjects, as long as there is trust between the participants. In this case, as in oral history, the ‘object’ or ‘source’ can be thought of as the storyteller or historian himself. It is the function of the professional historian to determine which objects, or sources, are sufficient to merit which constructed memories.

The fundamental historical problem is thus that constructed memories are made up of basic subjective memories, which are in turn derived from:
A. Basic objective memories—in the case where the source of the memory is an exterior object, such as a carbon-dated axe-head, or-

B. The subjects themselves—in the case where the source of the memory is an interior part of the subject like their feelings or emotions before a big event.

More often the case, it is the latter. In other words, the historian is usually quite literally tasked with trying to read the mind of his subjects. The process of intellectual history, of which this thesis is part, can prove particularly difficult in this regard because the ‘subjects’ are often just ideas or large social constructs.

In order to make this gargantuan task manageable, historians use theory. *Postalgia*, is an example of such theory. Its purpose is to be used, as an interpretive tool, to make the basic problem of historical interpretation easier. *Postalgia* is particularly useful because it obviates the need for the historian to evaluate basic subjective memories for their connection to objects or sources. Indeed, within a context of *postalgia*, it is unnecessary to determine the validity of a subject’s belief, since the theory is primarily concerned with the actions resulting from such beliefs.

*Postalgia* is thus most useful for the policymaker or historian trying to understand events because it does not concern itself with the truth of a motivation, so much as its effect on the world. For example, *postalgia* cannot answer the question about how well founded Nehru’s beliefs about Indian history were; it can, however, bring much to bear on how the beliefs he did have affected him going forward. Indeed, while there sometimes seems to be a distinction between reality and fantasy to the outside observer, this is irrelevant for the one who acts: for he only has access to his perceptions, however unfounded they are. *Postalgia*, a concept concerned with feelings for that which is
unexperienced, thus avoids the epistemological pitfalls of history, since it is unconcerned with evaluating the factual basis of people’s beliefs and focuses instead of their effects.

Towards a Constructive History

Postalgia, in this sense, constitutes a form of abstraction—a common tool of intellectual history that not only solves the problems of comparing supposedly unique elements, but also lends itself easily to the derivation of generalized ‘rules’ or ‘models’ that we may apply more broadly. The chief drawback of such an approach is that it can encourage what the ‘Cambridge School of history’ calls historical “anachronism,” whereby ideas are simply patched together in retrospect in order to justify an existing way of thinking. As the founder of the movement Quentin Skinner writes, “the tendency to search for approximations to the ideal type yields a form of non-history which is almost entirely given over to pointing out earlier ”anticipations” of later doctrines, and to crediting each writer in terms of this clairvoyance.” In other words, by universalizing the past into convenient and applicable frameworks, the historian skews his interpretation of the data into meaningless self-justifications for pre-ordained conclusions; He ‘begs the question.’ Since the purpose of this thesis is precisely to find

103 Ibid., 11. For an even more virulent attack against generalizing history, see: Michel Foucault, “Nietzsche, Genealogy, History,” in Language, Counter-Memory, Practice: Selected Essays and Interviews (Cornell University Press, 1980).
such ‘rules’ in history and apply them to policy in the form of *postalgia*, Skinner’s objection poses a serious methodological challenge.\(^{104}\)

Indeed, one of the chief criticisms of the realist answer to why India carried out the 1974 test was that it was anachronistic—it assumed that India would react to a security threat and went backwards in time until it found one.\(^{105}\) To avoid this anachronism while still retaining the ability to derive valuable lessons from the Indian case, the nuclear scholar is therefore left with two main options: the first is to concentrate on negative arguments—those that show how exceptions to a general rule can disrupt or nuance our contemporary understanding. This is the approach perhaps most favored by historians and reaches its methodological pinnacle in the school of ‘microhistory,’ a concept put forward by Italian historians Ginzburg and Poni in 1979:

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\text{[…] a truly exceptional (and thus statistically infrequent) document can be much more revealing than a thousand stereotypical documents. […] it is the marginal cases that bring the old paradigm back into the arena of discussion, thus helping to create a new paradigm, richer and better articulated. […] We propose, therefore, to define microhistory and history in general, as the science of real life [scienza del vissuto], a definition that seeks to comprehend the reasoning of both the supporters and the enemies of the integration of history with the social sciences, and for this, no doubt, it will not be pleasing to either side.}\(^{106}\)
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\(^{105}\) Specifically, 1964 from the Chinese test.

A good example of this kind of methodology as applied to the Indian case is George Perkovich’s *India’s Nuclear Bomb*, written to challenge the overriding realist paradigm of why states build nuclear bombs.\(^{107}\) The essence of such history is that it provides a logically sound argument in the spirit of what Karl Popper dubbed “falsifiability,” in which there exists “an asymmetry between verifiability and falsifiability; an asymmetry which results from the logical form of universal statements; [...] these are never derivable from singular statements, but can be contradicted by singular statements.”\(^{108}\)

Simply put: the presence of one black swan proves that all swans are not white; the absence of a black swan does not prove that all swans are white. It is thus the search for the ‘black swans’—the “marginal cases”—that can be used to nuance or discredit models that are too general and based on counting ‘white swans.’\(^{109}\) For Perkovich, this black swan was India, since it represented an exception to the notion that nuclear weapons were acquired only for security or prestige. Like the Socratic gad-fly, the good historian thus becomes the inconvenient public nuisance/teacher whose job it is to remind everyone how wrong they are and how complicated the whole ‘past thing’ is. In this context, history could correctly be called a “science of real life,” provided the only purpose of science were falsifiability—to show us how little we actually know.\(^{110}\)

The second methodological option, and one that actually allows history to provide fodder for creating policy models, is the approach offered by ‘positive’ or ‘constructive’ history. In this scheme, history can provide examples that may support a

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\(^{107}\) Perkovich, *India’s Nuclear Bomb: The Impact on Global Proliferation*.


\(^{109}\) Ginzburg and Poni, “The Name and the Game.”

\(^{110}\) Ibid.
working model, without necessarily ‘proving’ anything. The aim is not to falsify existing paradigms, but create new, better, models. *Postalgia* is an attempt to do precisely this.

Political realism, despite its tendency towards anachronism in the Indian case, is actually a good example of model that can apply to constructive history. The value of realism as a model for understanding international relations lies in the fact that, in a vast majority of cases, it genuinely seems to work. Indeed, the notion that political actors at least *intend* to base their decisions on some sort of rational calculus has found validation in too numerous an amount of cases to list here. Does this mean that realism is the only explanation for human behavior? Of course not. In fact, realism need not explain any aspect of actual human motivation for it to be useful: As long as it helps explain phenomena in an accurate and reliable manner, it does not need to be founded on any ‘true’ assumptions. This may sound somewhat strange to the historian or physical scientist—should we not be concerned with ‘truth’?—but is completely consistent with the premise of realism as a working model, an imperfect tool with which to evaluate phenomena.

*Postalgia*, like realism, is also an imperfect tool with which to evaluate phenomena. The assumptions of *postalgia*—that human beings create visions of their pasts and that these can affect them—cannot be proven, and yet seems to explain a whole host of human behaviors. In our examination of Nehru and Bhabha, for instance, there is no way that one could conclusively prove that what Nehru wrote, or what Bhabha said concerning India or the West, was what each man actually believed. And yet, the idea that there existed a great India of the past whose moral essence defined
India’s own modernity is remarkably consistent with the subsequent history of the nuclear program. *Postalgia* seems to work, even if the situations it describes cannot be proven to exist.

Critics of such models—including those of realism and *postalgia*—are thus misguided when they attack them for assuming the existence of a type of actor or situation that does not really exist. Take the case of realism again: a constructivist might argue that no human being actually thinks completely rationally or acts on anything but perceptions. This may be true but it is not a substantive argument against realism, which is but a working model. Rather, it is an attack on ‘realists,’ ‘neorealists,’ ‘hawks,’ ‘sharks’—those who conflate realism the explanatory model with realism the aesthetic cult that subsumes all aspects of their thoughts into some vague notion of strength, resolve, and ‘doing what needs to be done.’ Just because its supporters occasionally misrepresent it as an all-encompassing philosophy does not mean, as many opponents of realism seem to believe, that realism is irrelevant. Indeed it is probably the best predicative model we have for how players would act if they *did* have the appropriate knowledge and faculty.

*Postalgia,* of course, does not require such strict, epistemological prerequisites. Indeed, it works precisely because actors *do not* have appropriate knowledge and faculty. In a sense, therefore, it serves as a working, predicative model for the world beyond realism, in which people respond not to a rational calculus but to perceived notions and elusive feelings. This idea of the working model—one that is judged by its predictive power and not its assumptions—is succinctly described by the economist and social scientist Milton Friedman, before the days of his more controversial politics:
The relevant question to ask about the “assumptions” of a theory is not whether they are descriptively “realistic,” for they never are, but whether they are sufficiently good approximations for the purpose in hand.\footnote{Milton Friedman, “The Methodology of Positive Economics,” in Essays in Positive Economics (University of Chicago Press, 1953), 14.}

This methodology of “positive” or constructive history solves the problem of anachronism by obviating itself from the constraints of strict historical ‘truth.’\footnote{Ibid., 1.} This is not to say that it disputes the existence of truer or less false pictures of the past, but rather that the ‘truth question’—the obsession with finding the figurative black swans—is not the purpose of this sort of historical inquiry. For example, it is not important for the constructive historian to deduce whether the glorious, Indian past Nehru envisioned is supported by any historical evidence. All that is important is that whatever Nehru believed made him feel \textit{postalgic} enough to do the things he would go on to do.

Indeed, constructive history seeks to create historical narratives that, even though they are based on the same rigorous standards of empirical evidence and logic as ‘destructive’ histories, are fundamentally tools to make effective models. These models are in turn judged on their ability to convincingly describe our experience of the world. In the words of the canonical George and Bennett piece on case studies, such narratives should: “incrementally refine middle-range contingent generalizations, either by broadening or narrowing their scope or introducing new types and subtypes through the inclusion of additional variables.”\footnote{Alexander L George and Andrew Bennett, Case Studies and Theory Development in the Social Sciences (Cambridge, Mass.: MIT Press, 2005), 124.} Translated from political-science-speak, this means that a historical case study can achieve its objective, even if it is not necessarily
that similar to its subject, as long as it augments an existing way of looking at things, either by providing a new outlook or insight into an old one.

Constructive history is therefore the opposite of microhistory. For, as the ever astute historian of historians Edward Muir says, in microhistory:

[... ] the proper goal of the historian is not to explore the historical implications of a contemporary theory or problem, but to write about things that are totally forgotten and completely irrelevant to the present, to produce a history that is “really dead.”

For the constructive historian the goal is to do precisely the opposite: to write about things that are relevant to the present, even if currently forgotten or seemingly farfetched, in order to help develop effective lenses to view contemporary theories and problems in social science. *Postalgia* is an attempt to provide such a lens. In other words, to help produce a history that is really alive.

**Conclusion**

This chapter examined the place of memory and *postalgia* in the methodology of history. By breaking down the components of history and the problems of interpretation, it found that *postalgia*, as a working model, can provide a useful, analytical lens with which to view the past, especially when dealing with sort of problems policymakers generally face. In the concluding chapter that follows, we will examine some of these problems more specifically as they relate to the Indian nuclear program, in order to see what insights, if any, the theory of *postalgia* can provide.

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Chapter IV: Conclusion

Applied Postalgia

History, it is said, has many lessons to teach us; and there is another saying that history never repeats itself. Both are true, for we cannot learn anything from slavishly trying to copy it, or by expecting it to repeat itself or remain stagnant; but we can learn something from it by prying behind it and trying to discover the forces that move it.

--Jawaharlal Nehru, in a letter sent on August 9th 1933 from Naini Prison to his daughter, Indira Priyadarshini Nehru.115

And so, what really went through Indira Gandhi’s mind on May 18th 1974 when the news arrived of the explosion? We will likely never know, but we might have a good idea of what she felt: postalgic. Indeed, in this thesis, we explored the beliefs of two thinkers, Homi Bhabha and Jawaharlal Nehru, as they created India’s nuclear program. What we found was that, behind their combined efforts to bring India into the new, atomic age, was a desire for an Indian modernity based on their postalgia for India’s glorious past. Moreover, it was this postalgia, encapsulated in Nehru’s The Discovery of India and manifest in Bhabha’s transformation from Western to Indian modernist, that was responsible for shaping the character and purpose of the nuclear program in India. In this final chapter, we will examine the effect of this postalgia in the Indian case more closely, in order to see what insights it can provide for a constructive history of the nuclear program.

Postalgia, for one, helps explain why the program was established so early in India’s postcolonial history. Indeed, it is no coincidence that the development of the nuclear program in India overlapped with the birth of India as a political state. Although

115 Nehru, Glimpses of World History, 952.
India only became independent in 1947—three years after the founding of the Tata Institute—the existential issues with which it had to contend had existed for centuries: What exactly was India? What did it mean to be Indian? The *nostalgia* of Nehru and Bhabha for the great civilizations of India’s past was a reaction to this longing for a distinctly Indian identity. It helped answer these fundamental questions by revealing what the two founders believed to be India’s true nature—an intrinsically, advanced state, held back temporarily by its lack of technological sophistication. It was into this technological vacuum that the nuclear program was thrust, in order to jumpstart India’s return to form as an advanced nation.

Nonetheless, if technological advance were its only motive, then why would India have refrained from pursuing a nuclear weapons program until the late 1980s? The development of a nuclear weapon, especially by a country so recently decolonized, would have been an impressive feat of scientific advance and would thus have displayed emphatically India’s technological might as a modernized state. And yet, India not only renounced the building of a weapons program for itself, but repeatedly campaigned against the use of nuclear weapons in the United Nations and other, international forums.\(^{116}\)

The realist answer attributes this nuclear abstinence to a lack of necessity: India simply did not need a nuclear deterrent until the Chinese test in 1964. This interpretation is supported by a supposedly veiled threat in a speech by Bhabha in that year: Referring to the Chinese test, Bhabha spoke about how important it was for the international

community to offer new incentives for “creating a climate favourable to countries [like India] which have the capability of making atomic weapons, but have voluntarily refrained from doing so.” And yet, if this was supposed to be a genuine threat, then why did India not act on it until 1998? What held it back?

Once again, *postalgia* provides the solution. As you may recall from our analysis of Nehru’s *postalgic* beliefs about the Maurya Empire, advance for India also meant moral and social advance. India, at its heart, was supposed to be moral—a force for peace and social equality. The development of nuclear weapons, which Nehru considered a ‘destructive’ abuse of science, was therefore out of the question for the new country—a position that India maintained for decades. Indeed, even in their early, secret, 1950 discussions with French nuclear scientist Frédéric Joliot-Curie, the Indian delegation—consisting of Nehru, Bhabha, and a few other scientists—asserted strongly that:

> India’s interest in atomic energy is solely for its peaceful uses. Quite apart from the fact that she had not the resources to make atomic bombs and use atomic energy for military purposes, she was not interested in its military use on principle.  

This principled position against nuclear weapons remained with India throughout most of its nuclear history: It is the reason why it was so important that the Peaceful Nuclear Explosion be peaceful and perhaps why, even after its nuclear test in 1998, India felt

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compelled to adopt a ‘no-first-use’ policy.\footnote{Regarding the case of ‘no first use,’ it is important to note that there are many other possible reasons beyond \textit{postalgia} that could also explain this phenomenon—especially as the doctrine has evolved in subsequent years. Much has been written on the topic elsewhere, but for our purposes, it is important to point out this limitation of the model: Indeed, although \textit{postalgia} is likely to play a large part in determining the \textit{perceptions} that shape decision makers, there are often many other factors that drive actual policy, particularly as India’s nuclear program ages and matures.} While not discounting the realist interpretation altogether, such \textit{postalgic} principles certainly help explain why there might have been so much tension within the decision-making structures when it came to nuclear weapons—tensions that amounted to the decades of missed security ‘opportunities.’

\textbf{Peaceful Explosions}

Nonetheless, the largest puzzle in Indian nuclear history still remains to be solved: India’s nuclear explosions. If India was genuinely as peaceful in its outlook as it claims, then why would it spend so much time exploding nuclear devices? Indeed, the international, political fallout of its \textit{Smiling Buddha} 1974 test was immense. To violate such norms and upset so many nations, India must surely have had good reasons to do what it did. What could these be, if not issues of realist security or vital domestic politics?

Again, the answer is \textit{postalgia}. Indeed, to understand this seemingly twofold nature of India’s nuclear policy, we have to return once more to Nehru’s depiction of Ashoka, who “decided to abandon warfare in the full tide of victory.”\footnote{Nehru, \textit{The Discovery of India}, 132.} Herein lies the crucial mantra of India’s modernity, and the moral essence that guides its nuclear program: To be the truly advanced moral state that Nehru and Bhabha envisioned, India had to have moral \textit{authority}, as well as \textit{autonomy}. It was not enough to be peaceful in
the absence of any real power—India had already done that for years. Rather, India had to be able to indigenously embody force; only then, could it show restraint. And while this did not require India to go to the extent of building a full nuclear weapons program, it did mean that it had to at least have the capacity to do so technologically.

There are two main objections that one could make at this stage: the first is that, if it were important for India to display its capacity for destruction, then why would it wait until 1974? The second is that it could seem far-fetched that India would waste effort building things that it did not plan to use. The answer to the first objection is that India did not in fact wait that long. Indeed, as early as 1950, in that same meeting with the French nuclear director, Bhabha raised the possibility of using atomic bombs for “constructive purposes as for example in changing the geography of land in order to enable peaceful and beneficial projects to be realized.”

Regarding the second, as Bhabha’s inquiry clearly shows, India did have other uses for bombs besides as a weapon. In fact, the stated reason for the 1974 test was to test nuclear bombs for their application in mining. Nonetheless, if one is unconvinced by the official narrative, the stronger, *postalgic* reason was the spiritual fulfillment that came with displaying India’s power and restraint simultaneously. Indeed, ambiguity in regards to the dual nature of nuclear power—as something that can be used for destructive and constructive purposes—was central to India’s moral autonomy and thus its conception of itself.

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It is this ambiguity that gives policymakers and scholars such difficulty when it comes to India. Most of us, for instance, are brought up on proliferation narratives that see nuclear bombs only as weapons. In a rare misunderstanding, for instance, the innovative nuclear scholar Itty Abraham claims that Nehru’s admission in the 1948 Indian Constituent Assembly that he does “not know how to distinguish between the two”—referring to the technical distinction between nuclear power for energy and weapons—is the same as not knowing how to distinguish between “peaceful and military uses of atomic energy.”122 While it might seem trivial, when it comes to the Indian nuclear program, the difference between capability and use is absolutely essential. True: Nehru did not understand the distinction between the technical aspects of nuclear power—something that is inherently dual-use. He did, however, recognize the difference between the military and peaceful uses of atomic power: military was bad; peaceful was good.

Therefore, in order to balance its desire for an advanced, new India, with its deeper, moral essence, the Indian nuclear establishment embraced this ambiguity. Fundamentally, to be both Indian and modernized meant to maintain the potential to use nuclear power for ‘good’ and ‘bad,’ even if the latter would never be realized. And so, while India does possess nuclear weapons today—a ‘bad’ development by Nehru’s standards—it is worth allowing for the possibility that part of this may simply be a continuation of this doctrine of ambiguity. Those anti-proliferators who come to India in fear of its nuclear weapons may be well-advised to consider this before they get too agitated about what may well just be an unloaded gun.

Things Not Yet Experienced

This thesis concerned itself primarily with India and the mixture of antiquities, modernities and *postalgia* that gave rise to the substance and form of its nuclear program. And yet, this mixture is not unique to India or her nuclear history. Indeed, all histories and all pasts are, at some level, constructed fantasies, tapestries of experiences we have never had. Nations, in particular, thrive on such fantasies: We like to think that we are connected to certain golden pasts with golden ideals, or that we have suffered centuries of hardship and slavery, that we deserve the lands our ancestors supposedly held; that we are the chosen ones.

Such perceptions define the fundamental ways people think about themselves and the way they act. And yet, the policy-world, with its focus on the crises of the present and the various ‘rules’ of the international system, often loses sight of this larger picture of humanity. If we are to instill perspective back into our policy, it is necessary that we find a way to bring people back into the frame. It is people who affect the world, and hence people who create history.

*Postalgia*, as a theory that bridges the gap between such perceptions and action, thus has much to offer beyond just the Indian case. Those who understand the power of the human mind to delve into the imagined past, to know things that they have never felt, to remember lives that they never lived, are those who can see into the future. If history is to be really alive, we must learn to teach ourselves how to yearn for those things that we have never experienced. That is how the past influences the future; That is the power of *postalgia*. 
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