Negotiating power and constructing the nation : engineering in Sri Lanka

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Content

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This study marks a major change in my life. It is not only a formal deviation from my previous disciplinary training in mathematics and engineering to humanities and social sciences, it also points to a radical change in the way I process and express my thoughts. It took me time to distance myself from the positivist approach based on which I used to deal with problems, and to be familiar with an interpretivist way of life - a life that demands patience. It is within this context that I am immensely thankful to Prof. Nira Wickramasinghe, my supervisor, for her highly professional guidance provided throughout this study where I crossed disciplinary boundaries, relatively unhurt. Most of all, I thank her for keeping her cool and being relaxed with me when I was too ambitious, and even when she was not sure where I was heading. Her contribution was invaluable. My sincere thanks also go to Prof. H. Sriyananda, my co-supervisor, for his comments and useful advice offered while I was conducting fieldwork and writing. I am also grateful to the Doctorate Committee, Prof. Jonathan Spencer, Prof. Adriaan Bedner, Prof. Henk Schulte Nordholt and Dr. Alicia Schrikker for their very useful comments which helped me to produce the final version of my dissertation.

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Introduction

There is a close intimacy between Sri Lankan engineering and Sinhala nationalism. The narrative of the identity of the Sinhalese who are the majority community of the island of Sri Lanka, draws heavily on engineering; on its technological expertise and development as a source of pride and as an indication of civilizational superiority. Children and students have been brought up in an environment where they have heard stories about the great engineering works of their forefathers. The names of eminent engineers of modern times also appear in the narrative described above as a testimony to the continuity of this great engineering tradition of the Sinhalese. While learning the principles of modern engineering at the University of Moratuwa – a prominent technical university in the Western Province, undergraduates continue the narrative of their childhood, forming clubs and spending their leisure time in discussions about the engineering legacy of the island and of the Sinhala nation. And, as if providing symbolic proof of this close relationship between engineering and the nation, my own colleagues at the engineering faculty were seen at the forefront of the Sinhala nationalist movement during the 1990s and 2000s. Patali Champika Ranawaka, the current Minister of Megapolis and Western Development and Asoka Abeygunawardana, the current Chairman of the Strategic Enterprise Management Agency and an advisor to the President, were for example, instrumental in forming the ultra-right wing nationalist party *Jathika Hela Urumaya* (the National Heritage Party), an important and a recent milestone in further ethnicising the nation's politics.

Yet in spite of this close relationship between engineering and nationalism, the level of technological development in the island remains low when compared to other countries in the region and the world. Since gaining independence from the British in 1947, Sri Lanka's closest neighbour India opted for a path of industrialization, whereas Sri Lanka which obtained independence a year later, showed no interest in such a trajectory. The island remained a rice-producing agricultural country till recent times, when it has moved towards becoming a service sector economy, with no impressive performance to show in the industrial sector, where engineering matters the most.

This thesis explores how and why this particular narrative of the Sinhalese as a great engineering and technologically advanced nation has been constructed, modified and revised over time. It also looks at the people and engineering projects that have been included as well as excluded, in this process. It poses questions as to how and why at specific moments in the past, especially in the recent past -

certain individuals and events have taken on significance. This thesis also particularly studies how engineering as a narrative and also as a technical site, is linked to Sinhala nationalism.

The following specific questions are posed to guide the general inquiry described above.

1. What are the socio-political factors that influenced the inclusion and the exclusion of engineering in the nationalist narrative?

2. How have the pre- and post-independence ethno-nationalist tensions influenced and defined engineering?

3. Why and when do nationalist narratives undergo revision and what role does engineering play in such instances?

4. How far is engineering within the Sri Lankan context integrated with Sinhala nationalism?

While the narrative of Sinhala identity is about the high engineering skills of the nation's forebears, there is a school of thought that the origin of this narrative is recent. This argument that sounds convincing at first glance, seems more complicated as the debate on the technologically advanced ancient kingdom of Anuradhapura (fourth century BC to eleventh century AD), indicates. Conducting a discussion on Anuradhapura and the Sinhala Buddhist nation, Nissan (1989) is of the opinion that Anuradhapura was 'discovered' in the jungle by the British colonials and the ruined cities appealed to the romantic imagination of the European (p. 69). According to Jeganathan (1995), the two major clusters of ruins of tanks (i.e. interconnected systems of artificial reservoirs) and Buddhist stupas (i.e. large domes) excavated and restored by the colonial regime since the nineteenth century AD, provided the material infrastructure upon which the narrative is constructed (p. 120). The availability of 'sights/sites' on the ground provided credibility for George Turnour's translation of the *Mahavamsa*, the authoritative historical text that established Sri Lanka as a Sinhala Buddhist country. The *Mahavamsa* in turn, serves as the definitive text to authoritatively date and meaningfully encode the technological landscape excavated and restored (pp. 114, 123). Jeganathan (1995) describes how nineteenth century accounts by a range of Britishers such as William Knighton, James Tennent, Edward Upham and Thomas Skinner contributed to glorifying the excellence of Sinhalese engineering, a skill that was compared with the technological achievements of the Greeks, Romans and Egyptians in ancient times (pp. 116, 119). This forceful argument by Jeganathan was the reference when Jeganathan and Ismail (1995) declared that "Anuradhapura was "made" in mid-nineteenth century" (p. 6). However, for Sivasundaram (2007), the passage from the rule of pre-colonial monarchy to colonial rule was more gradual than is assumed

by Nissan and Jeganathan. By referring to non-colonial sources such as religious rituals, local legends, poems, ballads, the proclamation of land grants and temple paintings which reflect pre-colonial memories, he is of the opinion that "it does violence to the past to take an exaggerated view of the discursive powers of British colonialism and its ability to create a new meaning for Anuradhapura" (p. 116). While colonial sources often present Europeans as lone discoverers, British archaeology depended significantly on indigenous knowledge and assistance provided by local guides, informants and priests (p. 138). Therefore, without proposing an exact date of origin, this thesis treats the construction of the narrative of the Sinhalese as a nation of skilled engineers as a continuous process that is reconstructed on a day to day basis, modified and revised at various times.

This study can be positioned at the meeting point of the two spheres: technical and social or more specifically, technology and nationalism. Insensitivity to the link between the technical and social has left the common space shared by technology and nationalism grossly under-investigated, within the Sri Lankan context. Globally and over time, understanding of the relationship between the technical and social spheres has undergone change. Scholarly work indicates three phases. Up until the mid-nineteenth or the early twentieth century, technology was understood as a branch of the arts and as a space linked to everyday life. During this era, technology was known as a "mechanical", "practical", "industrial" or "useful" art, conveying a broad meaning that was not confined to technical artefacts and the principles of production alone, but which related to how society was organised to facilitate the process of production, of which the end product - the artefact - tended to serve a particular social function. The image of industrial arts was linked not just to technical details but to everyday life, artisanal skills, work and egalitarian ethos of the early republic (Marx 1994; Mitchem and Schatzberg 2009). However, according to Marx (1994), technology entered its second phase by the mid nineteenth century and gained full independence from its dependency on society by the time of the First World War. With the spread of state driven applications in many spheres, technology was seen to be represented by images of large-scale, complex, hierarchical, centralized systems such as railroads, telegraph and telephone networks, chemical industry, electric light and power grids and the automobile industry. At the same time, the early enlightenment idea of progress directed towards a more just republican society was generally replaced by a politically neutral, technocratic idea of progress aimed at the continuing improvement of technology (p. 241). This relieved the historical burden on technology to earn its legitimacy through performing social functions defined by society. This interpretation of progress in terms of the continuing advancement of technology bestowed on it the autonomous space

detached from worldly human affairs. Technology in this second phase was on its own, left to define its path of evolution through its own internal logic.

However, the Society of History of Technology (SHOT) established in the United States in January 1958 and the journal *Technology & Culture* (*T&C*) launched in 1959, have set the ground for the modern systematic study of technology[1] making way for the third phase (Roland 1997; Hughes 2009; Staudenmaier 2009; Post 2010). These studies have helped to broaden our understanding of technology and engineering by re-establishing the links between the technological and social spheres and by re-iterating their interdependency. Even though they have yet to dislodge the day to day mainstream understanding of technology which treats technology as an autonomous space[2] these studies have academically restored the umbilical cord between the technological and social that was cut during the time technology attained autonomy. Bijker et al (1989[1987]) describe three features of this third phase of renewed understanding of technology, that differentiate phase three from phase two. Authors who conducted studies on technology moved away from the approach of seeing invention as the work of an individual and to use this involvement by an individual genius as the central explanatory model. They also distanced themselves from the approach of technological determinism[3] and moved away from making distinctions among technical, social, economic and political aspects of technological development. This disagreement with the idea of separation of spheres as technical, social, political, etc. and holding their boundaries to be fixed, is also reflected in Bijker and Law (1992). Hughes (1986) based his critique on rigid boundaries among analytical categories when he developed the concept "seamless web" to explain the operations of technological systems. He recommended that “the historians and sociologists choosing such subjects would do research and writing in which the technical, scientific, economic, political, social, etcetera, became overlapping, soft categories". If a seamless web is the solution proposed by Hughes to deal with rigid boundaries of fixed categories, the school of actor-network has its own solution. Michel Callon, the French sociologist, in dealing with technology where technology is seen as a network of heterogeneous actors both human and non-human, questions the

1 The next important landmark in strengthening the systematic study of technology was the workshop held in early 1980s at the Twente University of Technology, Netherlands with the participation of historians, sociologist and philosophers of technology. It was the lengthy discussion held at the workshop that laid the foundation for the study on technology in three directions based on three approaches; taking technology as a social construction (i.e. social constructivist approach), seeing technology as a system which is an integration of technical, social, economic and political aspects (i.e. systems approach), and considering technology as an actor of networks where agency is allocated to both human and non-human actors (i.e. actor network approach) (Bijker et al 1989[1987]).

2 This treatment to technology seems to be shaken at times by major technological disasters and failures since the latter part of the twentieth century, generating a pessimism in the technological world (Marx 1994).

3 Technological determinism refers to the idea that technology develops as the sole result of an internal logic and then, unmediated by any other influence, moulds society to fit its patterns (Winner 1980).

practice of categorising or compartmentalising the elements in a system or a network "when these elements are permanently interacting, being associated, and being tested by the actors who innovate?" (Hughes 1986, p.287). Instead of using categories such as technical, social, political etc., the actor-network engages actors who are not bounded by disciplines[4] (Ibid).

This broader understanding of technology, while shedding new light on the way we see the world, has resulted in expanding the scope of research conducted not only on technology but also in the area of socio-political investigation. Bijker (2009) identifies contemporary societies as “thoroughly technological, and all technologies” as “pervasively cultural”. “Technologies do not merely assist in everyday lives; they are also powerful forces acting to reshape human activities and their meanings” (p. 607). MacKenzie and Wajcman (1999[1985]) explain this integration in simple words when they say that the "rich or poor, employed or non-employed, woman or man, 'black' or 'white', north or south - all our lives are intertwined with technologies, from simple tools to large technological systems" (p.3). If one expands the definition of technology in the way MacKenzie and Wajcman defined to include even tools that facilitated the evolution of human civilisations and take into consideration the technological advances in different parts of the world throughout human history, one can also argue that the world remains a technological one for all times[5]. This understanding expands the horizons of technical inquiry into technological systems on the one hand, and broadens on the other hand, the study of society within which technology is now seen as an embedded feature. Technological sites which were considered irrelevant in humanities and social sciences too become important field sites for social research under this broadened understanding of technology.

Except for a few isolated attempts, the examination of technology or society by treating Sri Lanka as a socio-technological space is a practice yet to be established. On the one hand the mainstream discussion on engineering, technology and technological change remains a highly specialized discussion on technical content and with hardly any reference to the social world. The vast pool of literature in the study of history, political science, anthropology, social sciences, etc. on the other hand, do not pay

4 This broader understanding of technology constructed through numerous case studies too met critique on several grounds. While some targeted the approach of Social Construction of Technology in particular, others had issues with the approaches of this third phase in general. One of the critiques that is of special importance to this discussion, in my opinion, is the bias of technology studies in technical aspects. While technical stands as a single item in this broad understanding of technology, the practice of technology studies remained technical-focused.

5 Commenting on a study on ancient irrigation systems, Bijker (2007), questioned the wisdom of creating categories such as ‘traditional’ and ‘modern’ to identify technologies, as the Indian water management practice under discussion incorporated advanced hydraulic science and engineering, at least in the sense that it demanded the application of modern engineering principles to understand why ancient Indian irrigation has functioned so well.

adequate attention to technology as a site of socio-political activity. For example, the narrative of "A History of Sri Lanka" by K. M. de Silva (2005[1981]), a popular reference for historical details of the island, pays no attention to the role of engineering works in shaping Sri Lankan society during the last century. A notable exception is the attempt by R. A. L. H. Gunawardana to discuss the role of technology in the formation of 'power sharing state' and hydraulic civilisation from the third century AD to ninth century AD. According to Gunawardana (1985b) the discovery of the cistern sluice, improvements in metallurgical technologies enabling the production of steel tools and the development of techniques of heavy construction transformed early agrarian society into a hydraulic civilisation. The sluice which helps to release water from reservoirs at a pressure which would not damage the embankment, paved the way for the construction of large-scale reservoirs, the emergence of a social elite who owned them and a rapid growth in commerce. The economic and social significance of the invention of the sluice, according to Gunawardana, is comparable with inventions such as the heavy, wheeled plough and the stirrup, in European history (Gunawardana 1978; 1985b). By taking a novel approach Gunawardana (2008) used the evolution of irrigation technology and the development of the state to periodize Sri Lankan history. However, the interest of Gunawardana in treating technology as a factor in socio political analysis is confined to the early history of the island.

Another example from the recent past of technology being used as a site for social inquiry, is the study by Wickramasinghe (2014b). She uses Singer sewing machines and other technical items introduced and used during British colonial times to problematise the history constructed through colonial archives and within the colonizer-colonial subject framework. Wickramasinghe describes a complex situation where people, goods and events belong in multiple loops (local, regional and global at the same time) and in heterogeneous time. The colonial state alone does not govern passive colonial subjects constructed by the colonizer. The people too are endowed with agency to forge their own identities and discourses.

The focus of investigations by both Gunawardana and Wickramasinghe is on certain technologies of the past rather than on modern engineering projects and on their relationship with the social. The Accelerated Mahaweli Development Project, designed and implemented in the second half of the twentieth century, is perhaps the only exception so far, as it has been the target of a few scholarly works. Researchers have observed the project through a variety of lenses. While Tennekoon (1988) positioned her discussion within a discourse of rituals of development, Hennayake (2006) formulated a conceptual model of indigenous development to facilitate her discussion. The Accelerated Mahaweli Development Project was also seen as a case of Sinhala colonisation in the thinly populated dry zone of

the island, by scholars such as Peebles (1990). Though positioned in debates on development and colonisation, these studies display some of the ways in which the modern engineering project is used as a site to mobilise Sinhala nationalism.

The scholarly discourse on nationalism in relation to engineering is not as yet adequately established. In the three-and-a-half-decade long debate on nationalism, engineering (in the form of industrialisation) appears within the modernist school as a precondition of nation building. For Gellner, nationalism that could lead to the formation of nations is only possible in modern, large scale, industrial societies (Gellner 1964; Breuilly 2009; Gellner 2009[1983]). For Gellner as well as Hobsbawn, the nation is a product of modernism. The latter situates the origin of a nation at the point of intersection of politics, technology and social transformation and states that nations and their associated phenomena must therefore be analysed in terms of political, technical, administrative, economic and other conditions (Hobsbawm 1990, p.10). Anderson (2006[1983]), too, identifies the modernist context under which new nations originated. "What ... made these new communities imaginable" was the unintentional but "explosive, interaction between a system of production and productive relations (capitalism), a technology of communication (print), and the fatality of human linguistic diversity" (pp.42-43). For him, the cultural origin of the nation was a result of the meeting mainly of two modern developments; the decline of religious communities and the dynastic realm (pp.12-22) and the mass consumption of newspapers (pp.33-36).

It is this rare presence of material conditions in the discourse on nationalism that has made Desai (2008) claim that the most influential accounts of nationalism - from Karl Deutsch to Benedict Anderson - treated nationalism as a cultural phenomenon[6] (p.403). National legitimacy according to this, is anchored in a continuous relationship with the past. The classical discourse on nationalism is hence a discussion that looks towards the past, leaving engineering, a practical art which is more about engineering the future than reconstructing the past, inadequately addressed. This nature of orientation towards the past, seen in general in the discourse on nations and nationalism is reflected in one of the important contributions on science, engineering and nationalism, *National Identity: The Role of Science and Technology*. In the introduction, the editors of the volume, Carol E. Harrison and Anne Johnson (2009), after a brief reference to the recent discourse on nationalism, turn quickly to the famous speech

[6] Desai considers Gellner to be an exception to the trend of treating nationalism as a cultural business. The only other major theory to account for nationalism in terms of political economy was Marxism, according to Desai (Desai 2008, p.403). Tom Nairn who incorporated many of Gellner's insights, replaced industrial society with capitalism when he theorised nationalism and established links with nationalism and capitalism (Ibid, p.403).

"what is a nation" given by Ernest Renan in 1882 to build a case for science, technology and nation. Renan's theorization that nations look backward as well as forward provides the turf required by Harrison and Johnson to bring the involvement of science and engineering into the discussion on nationalism and to position country case studies in context in their volume. In addition to the "glorious heritage" of their past, they need a "shared programme to implement" in a common future, quote Harrison and Johnson (p.3). By contrasting with the title *Invention of Tradition* by Hobsbawm and Ranger (1983) they coined the term "tradition of invention" to denote this role of science and technology in nationalism. Chatzis (2007) seems to be more forthright in identifying the agency of this forward-looking nationalism. He thanks engineers for not allowing to restrict the formation of modern nations and their entry into modernity merely by linking them to some 'happy hazy past', but by binding the formation of modern nations with the promise of a brighter future. Chatzis recommends that scholarship on the nation needs to be as attentive to nations' anticipated futures as to their imagined past (p.194).

An emerging pool of case study based literature which points to a variety of roles played by engineering in mobilising nationalism and constructing nations however, can be found elsewhere, away from the classical debate mentioned above. These scholarly interventions that are diverse in scope and can be positioned within several lines of investigations still remain unconnected and have not yet contributed towards the formulation of a general theoretical base to discuss engineering and nationalism. In comparison to the pool of studies conducted on the history of engineering and on how traditions of modern engineering have been established and how professions of engineering evolved within those traditions and spread over the past decades[7] (Picon 2004), studies that look at the link between engineering and nationalism are works conducted in recent times. While some of these investigations are into modern engineering works (i.e. major technological projects and technologies) and their relationship with the mobilisation of nationalism, the rest more or less focus on the role of engineers (i.e. as eminent engineers, groups of engineers and communities of engineers) in constructing and redefining nations and modern states. These studies represent cases in different parts of the world,

[7] "The Revolt of the Engineers: Social Responsibility and the American Engineering Profession" by Layton (1986[1971]) that examines the evolution of engineering profession in the United States, "New Profession, Old Order : Engineers and German Society, 1815-1914" by Gispen (1989) which discusses the evolution of Verein Deutscher Ingenieure (VDI), the powerful institute of engineers in Germany, and "The Engineers: A history of the Engineering Profession in Britain, 1750-1914" by Buchanan (1989) that describes in detail the origin and the spread of professional institutions of engineers in the United Kingdom can be taken as a few prominent examples. Attempts have also been made to compare these main traditions (Picon (2004) and Brown et al (2009), for example, by covering the time span from the eighteenth to twentieth century AD compare the traditions of engineering in France, Britain, USA and Europe). Investigations have also been done on engineering and engineering education in the peripheral Europe such as in Portugal (Diogo and De Matos 2007), in Spain (Roca-Rosell et al 2006) and in Turkey (Tantekin-Ersolmaz et al 2006) and in other parts of the world such as for example in Bahrain (Al-Sammak and Al-Shehabi 2006) and in Egypt (El-Sayed et al 2006).

from the west to the east, and trace a time span of several hundred years, from the seventeenth to the twenty first centuries.

Nuclear power in France in the twentieth century (Hecht and Callon 2009[1998]), the Palapa satellite in Indonesia in the twentieth century (Barker 2005), the national airplane project in Indonesia in the twentieth century (Amir 2007), water engineering projects in India, Netherlands and the USA in the twentieth century (Bijker 2007), the Port of Lisbon in Portugal in the nineteenth century (Saraiva 2007), water engineering in Vietnam in the twentieth century (Biggs 2008), large lakes in Western Java in Indonesia in the twentieth century (Oosterhout 2008), the Gotthard railway of Switzerland in nineteenth century (Schueler 2008), Barnes Wallis' designs of aircraft and submarines in England in the twentieth century (Zaidi 2008), the steel plant in Cilegon in Indonesia in the twentieth century (Moon 2009), the Canal du Midi in France in the seventeenth century (Mukerji 2009), European converging technologies (Nordmann 2009) and space exploration in Russia, India and China in the twentieth century (Siddiqi 2010) are some of the examples of modern engineering works under investigation. Mrazek (2002), taking a slightly different approach, discusses how the dream of an Indonesian nation is being formed mediated by the introduction of new technologies in general. Engineers in Weimar and Nazi Germany (Herf 1984), engineers and the discourse of Indian developmental nation (Kumar 2000), the role of inter-war engineers in constructing the Greek version of modernism (Antoniou et al 2007), French state engineers in the first half of the nineteenth century and the birth of French technocracy (Belhoste and Chatzis 2007), the changing relationship between the Italian engineering profession and the idea of nation in Italy (Bocquet 2007), national identities of engineers and technical identities of nation states (Chatzis 2007), the role of Mexican engineers in industry oriented nation building (Lucena 2007), French engineers and technocratic ideals of France from the eighteenth to twentieth century (Picon 2007), engineers and Indonesian industrial nationalism (Amir 2008), MIT trained Indian engineers (Bassett 2009), nineteenth century engineers and American national identity (Johnson 2009), German engineers and Russian national identity (Siddiqi 2009) and engineers and the Colombian technological nation (Valderrama et al 2009) are examples of communities of engineers that attracted scholarly attention.

The complex landscape of Sri Lankan engineering mixed with material reality, rhetoric and myth calls for diverse conceptual tools to engage with the research problem. The following three concepts, "developmental nationalism", "invented tradition" and "myths", as I see, provide contexts to position and guide the chapters in this dissertation. The three concepts correspond to the three main chapters of this dissertation, respectively. While “developmental nationalism” assists in facilitating a discussion

on the role of engineering in nationalism with a forward gaze, “invented tradition” and “myths” remain useful tools in discussing other engineering projects that act as sites of mobilising past-oriented ethno-nationalism.

Developmental nationalism

A line of debate that escaped the attention of Harrison and Johnson (2009), but could have provided a theoretical context to position at least some of the case studies in *National Identity: The Role of Science and Technology*, is the discourse on the developmental state. In contrast to ethno-nationalism that in general invokes memories of a past, the debate on the developmental state is about developmental nationalism where imagination of a community is mobilised towards a common future in a technologically developed state.

The term developmental state was in circulation since the 1980s when Chalmers Johnson (1982) paid attention to the process of the emergence of a Japanese nation as an industrial giant. Johnson in his publication "MITI[8] and the Japanese Miracle", dealt in depth with the Japanese state-driven fifty-year long industrialisation process that was coordinated by industrial policies and guided by the Ministry of International Trade and Industry. Woo-Cumings in her edited volume on *Developmental State* (1999) also discusses the centrality of East Asian industrialisation in the early formulation of the theory of developmental nationalism and the developmental state. The discourse that was constructed by looking at economic practices, first in Japan and then in South Korea and Taiwan, frames developmental nationalism as a means to combat Western imperialism and to ensure national survival. By expanding the discourse to South Asia, David Ludden (2005) takes the history of the modern developmental regime to the nineteenth century. For him, four modern developmental ideals that prevailed since the latter part of the nineteenth century made the developmental state possible. The first was the belief that the state would lead the development process on behalf of the public. Second was the trust placed in state funded infrastructure to boost private investment, expand and integrate markets, accelerate economic growth and enrich the state, benefiting the public at large. It was also thought, thirdly, that the poor would also be benefited by the resultant economic progress. And finally, it was believed that the advances in science and technology would lead to human progress in all nations (*Ibid*). In the thesis of Amiya Kumar Bagchi (1982; 1987; 2004), the transition of a society of feudal nature to a society of civic nature which assures the equal political rights of its membership, is displayed as a basic requirement in the formation of a developmental state. By taking the origin of the developmental nation further into

[8] MITI stands for the Ministry of International Trade and Industry, Japan.

the past Bagchi identifies Netherlands (sixteenth century), England (sixteenth to nineteenth century) and Germany (nineteen to twentieth century) as developmental states that predated the developmental state of Japan. He also pays attention to three more developmental states that appeared after the emergence of a Japanese developmental state (arose in the nineteenth century and survived into the late twentieth century) and before the looming of the East Asian states in the late twentieth century; Turkey and Brazil which emerged before the second world war, and India which emerged after its independence in 1947.

Zachariah (2005; 2012) provides the best description of the Indian developmental nation. Indian nationalism mobilised under the leadership of Jawaharlal Nehru looks like the ideal model of a developmental nation - tolerant, secular, inclusive, egalitarian and non-discriminatory. For Zachariah (2005) Indian developmental nationalism was a mixture of three predominant elements: 'socialism', 'national discipline' and 'science' which facilitated the incorporation of modern conceptions of order, progress, reason, science and discipline (pp. 211, 252). While socialism and national discipline set the ground, plans for industrialisation mobilised culturally diverse groups of people who had no common past to share and to imagine as members of a single nation, the Indian developmental nation. The plans of the National Planning Commission of the India Congress, the Plan for Economic Development of India (popularly known as the Bombay Plan) authored by prominent Indian businessmen, and the consecutive five-year development plans of the Indian government defined the nature of the Indian developmental state. Self-sufficiency in general and specifically in basic and key industries was the main guideline for industrialisation plans made separately for heavy key industries, medium scale industries and cottage industries (Zachariah 2005, pp. 216-18). Several prominent scientists, engineers and economists were known to play a leading role in building the Indian developmental state. The names of Meghnad Saha (astrophysicist), P.C. Mahalanobis (physicist turned developmentalist), Jayaprakah Narayan (economist), Minoo Masani (economist), S. S. Bhatnagar (Chemist) and H. J. Bhabha (nuclear physicist) are prominently highlighted (Kumar 2000; Zachariah 2005). Mokshagundam Visvesvaraya who had a long and distinguished career as a civil engineer and a knighthood from the British government and who spent a long spell as Diwan of Mysore state, is one of the pioneers of the imagination of the Nehruvian developmental state of India. Early twentieth century publications by him - *Reconstructing India* (1920), *Unemployment in India: Its Causes and Cure* (1932), *Planned Economy for India* (1936), *Nation Building* (1937) and *Memories of My Working Life* (1951) mapped the early blueprint of the modern Indian Developmental nation (Visvesvaraya 1920; 1932; 1936; 1937 and 1951).

Sakar (2008) adds another dimension to the discourse on developmental nationalism, a discussion which is generally guided by clear-cut categories of cultural and developmental nationalism. While accepting that these categories have relevance and value, Sarkar opts for an approach of treating all nationalism as consisting of both features, cultural and developmental (p. 432). However, one may wonder if this dual nature referred to by Sakar is in fact an important feature of nationalism or whether it is a misconstruction, due to the absence of a well formulated definition of the two terms. The perception that cultural and developmental as categories oppose each other is not exactly correct. Ethno-nationalism would have been the better choice in my opinion, to represent the opposing version of developmental nationalism. Desai (2009) proposes a slightly different approach to discuss this complex nature of nationalism. For her each nationalism has two dimensions: cultural political and political economic (pp. 246-47). The bias of each category of nationalism however, can be towards one of the two dimensions - developmental more towards political economics and cultural more in the direction of cultural politics.

Invented traditions

The discussion of traditions that are invented has introduced a new tool to investigate nationalism at work. Despite their historical novelty as Hobsbawm and Ranger (1983) convincingly argued, invented traditions establish continuity of the present and the future with a suitable past. By 'invented tradition' they mean "a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seek to inculcate certain values and norms of behaviour by repetition, which automatically implies continuity with the past" (p.1). In answering the question as to why antiquity is relevant, Guibernau (2004) finds the employment of antiquity as a source of legitimacy for a nation binding its members to a past stretching over their life spans and those of their ancestors. Invented tradition is a scheme adopted by the elite who found it increasingly difficult, along with the introduction of mass democracy, to maintain obedience, loyalty and the cooperation of their subjects and members, especially the working class (Hobsbawm and Ranger 1983, pp. 264-65). Hobsbawm and Ranger find three major innovations of the time particularly relevant when it comes to invented traditions: the introduction of primary education (the secular equivalent of the church), the invention of public ceremonies and the mass production of public monuments (p. 271). While differentiating invented traditions from invented customs and convention or routine and from genuine traditions, Hobsbawm and Ranger find invented tradition in three overlapping types: those establishing social cohesion and

collective identities; those legitimating institutions and social hierarchies and those socialising people into particular social contexts (p.9).

The idea that traditions are invented gained global popularity since its initial formulation in 1983 and contributed in improving our understanding in a range of fields from childhood, kinship, self to culture and nations (Sollors 1989). Ranger (1993), interestingly, has somewhat revised the 1983 thoughts he shared with Hobsbawm a decade later. While critiquing his own position on the invention of tradition in colonial Africa where he proposed a clear separation between the pre-colonial and the colonial, Ranger revisited his argument to suggest, reminding us the similar argument forwarded by Sivasundaram (2007) and described above, that "perhaps the elaboration of identities and invention of traditions in pre-colonial India and Africa took place in much the same way and for much the same reasons as in colonial India and Africa". He was also of the opinion that the traditions invented (in colonial times) are not, in general, a smooth passage but a process intensely contested by different groups whose interests are not served by them. It is with the uneasiness with the rigid message communicated by the term 'invented tradition" that the invention is entirely a new creation done by a single inventor at a given moment of time, that Ranger seems to prefer lately, the term "imagination" over the term "invention". He argued that traditions were imagined by many different people and over a long time.

Whether a moment or a process and whether invented or imagined, traditions, help to perform the basic function proposed by Hobsbawm and Ranger (1983); to establish continuity of the present with the past. Rituals, ceremonies and monuments with a technological touch commemorated repeatedly could either create an illusion of a technically advanced past or construct an imaginary bridge between the two islands; past (historical narrative of the nation) and the present (the site of modern engineering). The tradition invented and practiced repeatedly at the site of modern engineering could convert the modern site to a grand monument of the national past, in the minds of the members of a nation.

Myths

The significance of myths in the construction of nations is something that is accepted by most theorists of nationalism across the board, from primordialists to modernists and post-modernists (Ozkirimli 2010, p. 167). Myths take centre stage when a nation is defined, as in the case of Smith (2002), as "a named community possessing an historical territory, shared myths and memories, a common public culture and common laws and customs" (p.15). For some, they play a key role, perhaps even more decisively than

real events, in constructing collective memories of the origin and the golden ages of a nation (Bell 2003, pp.69-70). They remain an integral part of ethno-nationalist identities in the South Asian region in particular. Gunawardana (1976) recommends to historians that they move away from their traditional methodology and pay greater attention to the study of myths as a noteworthy source of information on social and political ideology, when they study the ancient history of South Asia. By focusing on myths of the origin of Sinhala people and of the foundation of their state recorded in the famous religious chronicles of Sinhala Buddhism, Kapferer emphasizes the capacity of these nationalist myths to achieve an overdetermining force by suppressing diversities of socio cultural life such as those connected to class, ethnicity, kinship, etc (Kapferer 2012[1988]). Gunawardana (1976) identifies the hegemonic narrative of Sinhala past, which itself is a myth, as a collection of sub myths linking in different ways the nation of Sinhala with Buddhism. A few years later in his famous article, "The People of the Lion: Sinhala Consciousness" Gunawardana (1985a[1979]) goes on to describe how this myth that has achieved hegemonic status was favoured among a few other myths of origin. According to Coomaraswamy (1986), the counter narrative, - the story of the origin of the Tamils, too is a myth built out of several other elementary myths.

Myths and history are considered antithetical in general. Positivist historiography declares that myth has nothing to do with history; academic mythology replies that history has nothing to do with myth (Heehs 1994). Discussing how history has become the dominant mode of constructing the past, Nandy (1995) identifies the ultimate aim of historians as "to bare the past completely, on the basis of a neatly articulated frame of reference that implicitly involves a degree of demystification or demythologization. The frame of reference is important, for history cannot be done without ordering its data in terms of something like a theme of return (invoking the idea of cultural continuity or recovery), progress (.....), or stages (....)" (pp. 47-48). Nandy, however, observes a change in approach in the recent decades where antagonism between myths and history seems to have compromised. He notes that it is fairly commonplace to say at present that there can be no true or objective past; that there are only competing constructions of the past (p. 49). Some go so far as to view history as a sort of myth (Heehs 1994, p. 5). Sophisticated myths, according to Smith (1999), are poetic forms of history and are "reconstructions of the communal past, which mix genuine scholarship with fantasy, and legend with objectively recorded data in the service of an ethic or regeneration" (p. 66). In contrast to the act of demythologization Nandy talks about when discussing the aim of historians, which is about denying the literal truth of myth, Obeyesekere as far back as 1984 introduced the term “demythicization” to explain

attempts that are made to make fantasies look real. In the process of demythicization, old myths are 'rationalized' by providing 'proofs', observes Obeyesekere (Obeyesekere 1984, pp. 378-79).

Myths, in the context of nations, serve to establish and determine a nation's foundation and system of values, creating a set of beliefs put forward as a narrative about the community itself (Schopflin 1997). In *Myths and Memories of the Nation* Smith (1999) provides a broad framework to discuss and analyse myths. He identifies six components of ethnic myths in relation to nations, depending on the key aspects highlighted: temporal origins (when we were begotten), location and migration (where we came from and how we got here), ancestry (who begot us and how we developed), heroic age (how we were freed and became glorious), regeneration (how we restored the golden age and renewed our community as in the days of old) (pp.62-70). While a main myth constructs a narrative of temporal and spatial origin of the nation, a series of sub myths can be occupied in parallel to explain the existence of other groups, justifying their "anomalous status" and making way to absorb them to the social structure of the nation, argues Obeyesekere (1984)[9]. Obeyesekere (1984) refers also to instances where myths facilitate a state of coexistence of an ethnic group with other ethnic groups. This is done by a myth that positions the other ethnic group as subservient to the main ethnic community[10]. Stories of golden ages and their heroes and sages, a key element of ethnic myths, leave open an easy passage for the members of a nation to return to the past. The future of the ethnic community derives its meaning and shape from the pristine golden age when men were heroes (Smith, p. 65) or grandiose heroes as Obeyesekere (1984) prefers to identify them (p. 376). They rather brought into the open those qualities of courage, wisdom, self-sacrifice, zeal, and stoicism - qualities that are felt to be lacking in the present generation (Smith 1999, p. 86) and boosted the self-esteem of people whose "morale" had sunk low in an era of troubles (Obeyesekere 1984, p. 372)[11]. The significance of myths in constructing a nation and the key role that engineering played in a narrative in constructing the Sinhala nation, suggests interesting links between

[9] In his famous work "The Cult of the Goddess Pattini", Obeyesekere (1984) pays attention to the myth of King Gajabahu who is said to have brought 12,000 Tamil prisoners back from India along with the 12,000 Sinhala prisoners already taken to India. The myth of Gajabahu, a "colonization myth" according to Obeyesekere, explains the existence of South Indian settlers in parts of the Kandyan provinces and coastal regions and "served as a useful mechanism for incorporating immigrant populations into the Sinhala social structure till recent times" (pp. 364-367).

[10] Obeyesekere refers to the case where Muslims in Sri Lanka are tolerated thanks to a sub myth when their god and their system of worship were made subsidiary to the Buddha and Buddhism (Obeyesekere 1984, p. 308).

[11] Smith (1999) goes on to list a several recurrent features of myths: they designate the basic cultural entities of social relations, they link past to future, they possess external referents of comparison, they designate a space and time for action, they contain impulses for collective action, they assume the possibility of change, they are partly voluntaristic and regenerative and they tend to be multiple and even competing to be the legitimate narrative (pp. 82-83).

the two spheres - myths and engineering, allowing engineering as a myth to play an important role in addressing the research questions of this study.

Sources

Conducted at the crossroads of Sri Lankan engineering and Sinhala nationalism, a space mixed with materiality and fiction, this study depends on a variety of sources to build its argument. Texts produced under the British colonial administration and the independent Sri Lankan state are used as sources. These include technical material available in the sphere of engineering and non-technical material found in the popular public space. Also used as sources are a range of other material such as memoirs, reports of public events and processes, biographies and oral histories collected through in-depth interviews. The main archival work was carried out at the National Archives of Sri Lanka, at the library of the Institute of Engineers Sri Lanka and at the library of the Mahaweli Authority of Sri Lanka.

Sessional Papers and Administration Reports, the two main sources of colonial literature, play an important role in investigating the time span of the early twentieth century. Special attention is paid to commission reports on industries and to reports produced by the officials of the Public Works Department (PWD) and its branches and incorporated in the Sessional Papers and Administrative Reports. This dissertation relies heavily on Hansards of the State Council to explore the response of the Ceylonese elite to main infrastructure projects designed and implemented during the first half of the twentieth century. Annual reports of relevant engineering projects and programmes, ad-hoc reports and feasibility reports of related mega engineering projects published by the United Nations as well as by ministries of the Sri Lankan Government are examples of sources produced during the post-colonial period and used for this study. A range of propaganda material developed by the Ministry of Mahaweli Development, such as leaflets and booklets, are also used as sources.

Some of the articles that appeared in annual technical journals published by the Engineering Association of Ceylon and lately by the Institution of Engineers Sri Lanka are used in inspecting tensions between colonial and Ceylonese engineers. A wide range of sources such as newspaper articles, video clips, web articles, popular TV and radio programmes, fiction and semi fiction, commercial advertisements, and books and booklets, mostly in the Sinhala language, are also used in analysing the popular narrative of Sri Lankan engineering, which undergoes modification and revision on a regular basis.

Memoirs pertaining to some of the key mega engineering operations and biographies of prominent Ceylonese engineers, too, provide assistance in dealing with research questions. In addition, the reports

of public events such as meetings and book-launches, some of which appeared in newspapers and others as notes taken by myself, are sources used for this study. In-depth interviews conducted with ex officials of leading engineering institutions in Sri Lanka and also with members of certain artisan castes help in filling gaps and strengthening the credibility of the arguments constructed using other sources.

Structure

In an attempt to address the research problem and specific research questions this dissertation mainly looks at three engineering and engineering related sites; the Aberdeen-Laxapana Hydro Electric Scheme (1900-1936), the Accelerated Mahaweli Development Project (1978-1985) and the discourse that has recently taken shape among the majority Sinhala community on Ravana, the engineer and the mythical king of the epic Ramayanaya, and his technological dynasty (2000-2016)[12]. The Accelerated Mahaweli Development Project (AMDP) was selected on the grounds that it was the largest engineering project ever implemented in the island. Though attempts have already been made to look at the AMDP through other lenses, an explicit focus on engineering and Sinhala nationalism was still missing. There were several reasons for me to select the Aberdeen-Laxapana Hydro Electric Scheme as another site for investigation. It was the largest engineering project discussed and implemented during the early part of the twentieth century. While the AMDP represented the era of post-independence, the Hydro Electric Scheme belongs to the colonial era. Engineer D. J. Wimalasurendra, the main figure behind the Scheme, and his relationship with the Navandanna caste, the community of professionals linked with pre-colonial engineering, made the case even more interesting. The site of Ravana was selected as a response to the unprecedented interest shown by the Sinhalese in Ravana at the time I started my research work in 2013/14. While identifying him as a Sinhala / Hela king who ruled the island of Helas thousands of years ago, newspaper articles, books, TV and radio programmes and websites discussed at length the engineering skills of Ravana and technical advancements of his dynasty. In contrast to the understanding that the narrative of the Sinhalese as a great engineering nation is a construction made at a particular historical moment, nineteenth century colonial Ceylon, these three sites that represent different time spans spreading over a century illustrate that it is an ongoing process involved with reproductions, modifications and revisions, with people and projects included and excluded for convenience. A detailed

[12] At the design stage of the study, I was left with two options to address the research problem; to conduct a case study based investigation by focusing either on detailed life stories of a group of selected engineers or on technological sites on which engineering works were constructed. Engineers or sites that were selected were expected to ideally represent different time periods during the last century. The ground work I did at the initial stages of this study encouraged me to favour technological sites over engineers.

discussion on these three sites is assumed to showcase how and to what degree engineering is linked with Sinhala nationalism. The four research questions do not correspond to four individual chapters of this dissertation, but act as threads common to all, while certain questions guide certain chapters more than others.

Chapter 1 sets the ground for the discussion described above. By paying attention to how some social groups (e.g. engineering academics, engineers attached to professional organisations and the general public) perceive the history of engineering in Sri Lanka, Chapter 1 constructs a static view of the popular narrative of engineering in circulation in the recent past, by allowing subsequent chapters of this dissertation to establish the dynamic nature of the process. It seeks to explore key common features of contemporary narratives of Sri Lankan engineering and how these features forge a relationship between engineering and Sinhala nationalism.

Chapter 2 seeks to explore why the Aberdeen-Laxapana Hydro Electric Scheme, the most important engineering intervention of the first half of the twentieth century, was delayed by decades in construction and commissioning and why the Scheme hardly appears in the narrative of the Sinhalese as a great engineering nation. As a part of the investigation, I have focused on identifying the tensions between the colonial regime and locals from individual to institutional levels and the tensions among the local elite, themselves. The investigation is conducted within the broader context of the socio-political landscape of the island in the first half of the twentieth century on the one hand, and challenges to industrialisation faced by colonies in the Indian subcontinent on the other. Chapter 2 also seeks to find out the degree of spread of the collective imagination of Ceylonese for an industrially advanced Ceylon at the time and, in particular, why as in the case of India, Ceylon failed to become a developmental state.

Chapter 3 looks at the Accelerated Mahaweli Development Project - the largest development project ever implemented in the island, as a technological system that generates multiple meanings to multiple audiences. It explores multiple ways in which the Project responded to post independence ethno-nationalist tensions, both discursively as well as in real material terms, to settle ethno political issues of the time. The discussion of the role of the Accelerated Mahaweli Development Project is conducted in relation to the role of other mega engineering projects in the world, in nation building and nationalism. Chapter 3 seeks to investigate how ethno-nationalist tensions of the time are embedded in the technical design of the Project. Also examined is the role played by engineers as mediators between engineering and the concerns of nationalism.

Chapter 4, by looking at the recent widespread interest in the mythical king Ravana whose engineering skills led to the formation of technologically advanced Lankapura dynasty, examines how a narrative of engineering in the public sphere can be affected by new developments in the arena of nationalism. It also seeks to investigate how a narrative of a technologically better past contributes in revising the narrative of a nation. As a way of justifying the selection of the Ravana surge as a main case study, Chapter 4 attempts to assess the spread of Ravana discourse among the Sinhalese in recent times. While noting the existence of the Ravana story as a folklore among the Sinhalese over centuries, it tries to speculate special conditions under which the Ravana narrative as an alternative, gained an unprecedented level of popularity among the Sinhala community in the recent past - to the extent of posing a threat to the official Vijaya narrative of origin of the Sinhala nation. It seeks to define this Ravana 'moment' of the twenty first century in comparison to the nineteen century 'moment' of Sinhala nationalism, the 'moment' at which the official narrative of the Sinhala nation is said to be constructed.

While examining the multiple levels at which Sri Lankan engineering both as a narrative and as a practice is integrated with Sinhala nationalism, this dissertation attempts to bring together the areas of technology and nationalism that have long been seen as distinct fields of inquiry, into a single space of debate and critique.

Chapter 1

"Engineering is in our blood": a popular narrative of Sri Lankan Engineering

In a message to the centenary commemoration publication of the Institution of Engineers Sri Lanka (IESL) in 2006, President Mahinda Rajapakse claimed that "engineering is in our blood" (Sivasegaram 2006). Even though he did not specifically say Sinhala blood - the blood of the majority Sinhala community, the reference was to the engineering skills of the Sinhalese. The statement by President Rajapakse was made at a time when he was providing political leadership to the war against the Liberation Tigers of Tamil Eelam (LTTE), the powerful Tamil militant group which fought for a separate state for Tamils, or Eelam. It was a time when the rhetoric of Sinhala nationalism was running high. President Rajapaske's regime led the final phase of the decades-long civil war that started in 2006 and ended in 2009 with the defeat of the LTTE[13]. In the same message he further stated that "we have a proud engineering past. Let us make the future even greater" (Ibid).

1.1 The three cases

The aim of this chapter is to describe a prevailing popular narrative of Sri Lankan engineering in more detail and highlight the key features that are used to maintain the narrative's relevance. In the absence of any authoritative text, three cases selected from the academic, professional and public spheres are used for this purpose; a course offered by the Faculty of Engineering Technology of the Open University of Sri Lanka entitled "History of Technology"; a documentary film "A Hundred Year Renaissance" produced as a part of the centenary commemoration of the Institution of Engineers Sri Lanka (IESL) and a ceremony held to re-launch the book *Wewa* (the tank) written by Udula Bandara Avusadahami, a well known commentator on the ancient irrigation systems of Sri Lanka[14]. These three cases taken together provide material to create a quick overview of how mismatches and incompatibilities between the

[13] The history of the armed struggle for the separate state, Tamil Eelam, goes back to a past of two to three decades. The war has led to the loss of eighty thousand to hundred thousand lives, heavy damages to the infrastructure and colossal loss of wealth. The final phase of the war from 2006 to 2009, known as Eelam war IV with three more phases before and ceasefires in between, can be considered as the most ruthless and devastating which was fought under the leadership of president Rajapakse who was elected to power in the 2005 presidential elections. With initial setbacks the Sri Lankan government forces moved ahead and captured territory held by the Tamil Tigers step by step to crush the resistance in May 2009 with the killing of the supreme leader of the LTTE, Velupillai Prahbakaran. Parallel to the process of war victories one could observe a surge of Sinhala nationalism the island had never witnessed before.

[14] *Wewa*, the human-made tank or a reservoir of different scales, is considered as the foundation stone or the basic unit of the ancient irrigation systems.

stories of the two traditions of Sri Lankan engineering (the pre-colonial tradition that goes back to the ancient past, and the colonial and postcolonial modern tradition introduced since the time the British occupied the island in the nineteenth century), are made invisible for a common goal, to boost the agendas of Sinhala nationalism. The popular narrative of engineering as informed by the three cases is about a continuous tradition of engineering illuminated by the engineering skills of the Sinhalese and their engineering works. In this narrative, advances in engineering in areas such as irrigation, water management, metallurgy, civil construction and town planning are represented by living monuments such as reservoirs, the cascade systems of tanks, multi-storey structures, iron smelting furnaces and Buddhist stupas. The superiority of Sri Lankan engineering is marked by precision of design and construction, complexity, uniqueness, grand scale and environmental sustainability.

The course titled "History of Technology" (MPJ4131), one of the few interdisciplinary courses offered as an optional course to engineering undergraduates at the Open University of Sri Lanka, is the first course on the history of technology offered within the Sri Lankan university system. It takes students on a journey into Sri Lanka's past using three case studies[15]. The first is a discussion on the ancient wind-powered iron smelting technology that reached its zenith during the first millennium AD. High-quality Sri Lankan steel was produced in mass scale in the monsoon-fanned furnaces built into the windward slopes of Sri Lanka's hills[16]. The second case study discussed in the course focuses on the Sri Lankan irrigation system which was advanced at the time of its early appearance circa fifth century BC, declining in the thirteenth century BC and renewed later, during the British colonial era of the nineteenth and the twentieth centuries. The traditional cascade system of tanks used to capture, store and efficiently utilise rainwater, a system that is seen by many (e.g. Madduma Bandara 1985; Panabokke 2000; Tennakoon 2000) as a model for sustainability and an advanced system of water management, and this

[15] The three-credit course "History of Technology" consisting of a course team mainly of engineers is offered at the third level of the five-level degree programme, Bachelor of Engineering Technology. The printed course material which I use for this discussion consists of two units, one on the history of engineering in Sri Lanka, and the other on the history of engineering in the world. Case studies are used to facilitate discussions among the students on both the Sri Lankan and the global cases. For the purpose of this chapter I pay attention only to the unit on Sri Lankan engineering (The Open University of Sri Lanka 2009).

[16] By quoting the research work done by archaeologist Gill Juleff, lessons allocated to discuss this technology describe how these unique devices, wind-driven furnaces, produced one-step steel that took competing technologies several steps. The invention of numerous iron smelting sites on summit hills in the region of Samanalawewa in 1988 has led Juleff to conduct excavations in 1990-1991 to find out remains of a furnace that was used to smelt iron. Juleff recreated the furnace out of remains she found to prove the theory which was just a hypothesis till then that the furnace used winds of the southwest monsoon to smelt iron (Sadanandan 2008). Juleff's findings were published in *Nature* in 1996 under the title "An Ancient Wind-Powered Iron Smelting Technology in Sri Lanka" – and provided ground material for the section on ancient iron smelting in the course "History of Technology" (Juleff 1996).

is presented with diagrams[17]. The thriving shipbuilding industry that is said to have developed between eleventh to thirteenth centuries AD is the third case study[18]. While discussing how Sinhala mariners engaged in voyages to different parts of the world for diplomatic, trade and religious purposes, it also describes the types of craft used (including craft used for inland fishing and transport), the types of wood used in construction as well as descriptions of the major ports in operation at the time (The Open University of Sri Lanka 2009).

The twenty minute and fifty eight second long documentary, "A Hundred Year Renaissance", the second case used in this discussion recreates an environment of engineering practice in ancient times along with scenes of modern engineering, to relate a story of a continuous engineering tradition. The frequent references to a history of Sri Lankan engineering extending beyond two thousand and five hundred years into the past as described in the documentary, relates perfectly to the time span of the history of the Sinhala nation - a history which is considered the official history of the island and is taught in primary and secondary schools. The images that appear in the narrative of ancient engineering of buildings, temples and reservoirs, are the same images that appear in the narrative of the Sinhala nation. The documentary displays the images of *Lovamahapaya* (the remains of the nine storey structure, the tallest building of the island during the first millennium AD, located in the Buddhist holy city of Anuradhapura), *Ruvanweli Seya* (the sixty meter high Buddhist stupa in the holy city of Anuradhapura), *Abhayagiri Seya* (the ninety five meter high second largest Buddhist stupa in the world located in the holy city of Anuradhapura), *Jethavana Seya* (standing one hundred and twenty meters high the tallest Buddhist stupa in the world located in the holy city of Anuradhapura), *Kalawewa* (the massive reservoir spread over an area of two thousand and six hundred hectares located in the ancient kingdom of Polonnaruwa) and *Yoda Ela* (the canal connecting the ancient kingdoms of Polonnaruwa and Anuradhapura) (*A Hundred Year Renaissance* 2006). The greatness of the works of ancient engineering of the Sinhalese is central to the narrative. The ancient technological systems are considered to be engineering marvels on par with or even exceeding engineering standards in many parts of the world during this period. High quality steel smelted in wind-driven furnaces in the Sri Lankan hills is said to have been manufactured for export purposes and the famous Damascus swords are said

[17] Interestingly, the section allocated for ancient irrigation is annexed with a discussion on irrigation practices in colonial and postcolonial times for the mere purpose of comparison and to highlight the superior features of the ancient system. Examples used to discuss irrigation and agriculture under the postcolonial period; the colonisation of the dry zone, the green revolution and the Kotmale Project that belongs to the Accelerated Mahaweli Development Programme are seen as failed attempts either socially, environmentally or technically (The Open University of Sri Lanka 2009).

[18] The article by Kamalika Pieris titled "Sailing Crafts in Ancient Sri Lanka" that appeared in *The Island* newspaper on the 10th August 2005 is used to facilitate this discussion.

to have been made of Sri Lankan steel. Ancient irrigation engineering in particular is hailed as superlative in terms of water management, while Sri Lanka's ships are said to have been the largest sailing the Indian Ocean in the eighth century BC (The Open University of Sri Lanka 2009).

The book Wewa was re-launched on the 2nd of February 2016, at the Librarian Services Board auditorium in Colombo. This was the third case used for this discussion, about the living works of engineering of ancient times and about how engineering is enmeshed with the politics of Sinhala nationalism. The *Wewa* or village tank, is the basic unit of water storage of the ancient irrigation system discussed as the second case study of the course "History of Technology". The new edition of the book which was originally written in 1999, was dedicated at the re-launch to the community of Buddhist monks "for the service they have rendered to preserve and enhance the knowledge base that was built by having *wewa* and *dageba* (the stupa of Buddhist temple) as the centre of Sinhala civilisation and for leading people in the island for a way of life governed by such knowledge". The event was chaired by leading monks of the two main Chapters of the Sri Lankan Buddhist institutions, *Malwathu* and *Asgiri*, and was addressed and attended by several leading members of the contemporary Sinhala nationalist movement, showing how the modern narrative of ancient engineering is adjusted to incorporate the contemporary challenges of Sinhala nationalist politics[19].

1.2 The narrative of engineering as a discussion of heritage

Conducting a lengthy discussion on the past and heritage Lowenthal (2015) observes that the narratives of the past (i.e. memory and history) such as the ones described by the three cases above derive and gain authority from physical remains. "They confirm or deny what we think of the past, symbolise or memorise communal links among generations, and provide archaeological metaphors that illuminate history and memory". They create a bridge between then and now (p. 20). Literature presents several debates that can be used to position a discussion about the popular narrative of Sri Lankan engineering. The role of materiality and grandiosity in the construction of past-oriented identity is a topic that is discussed widely. For Wickramasinghe (2013) there are at least two main routes to the past: history and heritage. By favouring history as a better academic practice to investigate the past, she positions the narrative of an authentic Sinhala past that was grounded in the age-old technologically-advanced

[19] In addition to the presence of a large number of Buddhist monks, the ceremony was attended by leaders of the Sinhala nationalist movement such as Gunadasa Amarasekara (the prominent Sinhala writer and poet and a leading member of the Patriotic National Movement), Wasantha Bandara (General Secretary of the Patriotic National Movement and a leading member of the ultra-nationalist political party, National Freedom Front) and Bengamuwe Nalaka (General Secretary of the Patriotic Bhikku Front).

hydraulic civilisation or in other words, a past as represented by the popular narrative of Sri Lankan engineering in the "heritage route". In doing so she refers to the traditional meaning of heritage that was generated out of a discourse identified by Smith (2006) as 'authorised heritage discourse'. According to this, heritage is understood to be static. It is a frozen past that is fossilised in its material fabric (Weerasinghe 2016). By referring to traditional definitions of heritage such as "that which a past generation is preserved and handed on to the present and which a significant population wishes to hand on to the future" as an example Harvey (2001) highlights the role of the "very physical and artefactual" presence in the idea of heritage (p. 327). Material or tangible heritage provides a physical representation of those things from 'the past' that speak of a sense of place, a sense of self, of belonging and community (Smith 2006, p. 30). Not only that the monuments, the objects of nationalist heritage, are artefactual and physical, they are grand in size. The 'authorised heritage discourse' says Smith (2006) "privileges monumentality and grand scale, innate artefact/site significance tied to time depth, scientific/aesthetic judgement, social consensus and nation building" (p. 11). Grandiose monuments such as tall stupas, grand reservoirs, long canals or complex water distribution webs became witnesses to history that took on a commemorative role in triggering certain public memories and values (p. 19). According to Elgenius (2005) the significance of monuments lies above all in their symbolic character to represent the nation (p. 284).

The common understanding of heritage, "authorised heritage discourse" in Smith's (2006) terms, where tangibility (i.e. materiality, objects, artefacts and monuments) played a central role in meaning construction however, seems to have changed as a result of interventions by scholars in the recent past. This new understanding of heritage provides fresh tools to revisit the popular narrative of Sri Lankan engineering along the 'heritage route'. Writing an introduction to her famous work "Uses of Heritage" Smith (2006) declares that her work starts from the premise that all heritage is intangible. The recent tendency therefore is to view heritage not as a 'thing' or a 'site' any more but as a discourse or a process. Representing this dynamic nature, Harvey (2001) defined heritage as a "verb". Grandiose monuments are treated no more as products of technology containing stories of the past freezed within themselves but as mere cultural tools that can facilitate the construction of a narrative of the past (Smith 2006, p. 44). Therefore "heritage is not only about the mediation of cultural and social conflicts, but is ultimately about the mediation of cultural change (Smith 2010, p. 64). According to this, heritage has two functions; to promote "a conscious version of history by state sanctioned cultural institutions and elites", and to be "a resource that is used to challenge and redefine received values and identities by a range of subaltern groups" (Smith 2006, p. 4).

This shift from tangibility to intangibility and from the centrality of grandiose monuments to the key role played by discursive inputs provides an alternative way of engaging with the popular narrative of Sri Lankan engineering. Literature indicates three prominent features of the narratives of heritage; silence (on people, events and time slots), the presence of the present in narratives of the past, and the role heritage plays in nation building. The rest of this Chapter draws from these insights to discuss the ways in which the popular narrative of engineering uses silence as a tool to construct an unproblematic story of engineering excellence of the Sinhalese and how gaps are negotiated and a smooth narrative is built by extending the present to the past as a strategy. An attempt is also made to discuss the extent to which the narrative of engineering and the contemporary politics of Sinhala nationalism are enmeshed.

1.2.1 Silences

Narratives about pasts are always about what people remember and what they forget (Harvey 2001). By paraphrasing what Crouch and Parker (2003, p. 396) quote, it can be said that "we only retained the memory of events that have 'created' us at the decisive instants of our 'pasts'". What is perhaps more important and interesting in a narrative of heritage can be things that are neglected, forgotten and silenced. Narratives of heritage often involve the selective use of history to substantiate its credentials (Lowenthal 1994; Crouch and Parker 2003). The dominant discourse constitutes the idea of heritage in such a way as to exclude certain social actors and interests by active engagement from the start and throughout the entire passage of time (Smith 2006; Lowenthal 2015). The popular narrative of Sri Lankan engineering maintains a silence on certain topics.

1.2.1.1 Silence on modern works of engineering

While the history of engineering in Sri Lanka has the ambition to record practices from the recent to the ancient past, all three case studies of the course "History of Technology" (e.g. wind powered iron smelting, irrigation and ship building) were about engineering skills of Sri Lankans who lived thousands of years ago. It is interesting to note that the modern tradition of engineering with a history that goes back to the colonial occupation and which contributed to the building of the modern Sri Lankan state remains unrepresented, as if there is no case study from that period that is worthy of attention.

Modern engineering was indeed introduced to Sri Lanka during the Dutch colonial rule (1640-1796)[20]. However, it was during the British occupation (1796-1948) and thereafter in post-independence Sri

[20] The involvements on a limited scale were in introducing their distinctive architecture, in constructing forts and fortresses, in restoring some of the irrigation works and in constructing canals and waterways for which they are world famous.

Lanka that the practice of modern engineering was properly established on a foundation of related institutions and infrastructure. The island went through great changes during the British era. A large number of modern buildings appeared in main towns. A road and a railway network with connecting bridges spread across the country, while the transport system was upgraded. Pipe borne water was introduced. The ancient irrigation network was rehabilitated and new irrigation schemes were introduced. Telegraph services were established, telephones were installed and radio broadcasts began. Power stations were built to supply power to domestic, plantation and industrial sector applications. The modern Sri Lanka with the major cities, high-rises, mega-reservoirs, power stations, highways and industries one sees today, was built after independence. Infrastructure for technical education was established[21] to fulfil the needs of the new nation-state. The state institution structure started operations as the Public Works Department, with multiple expertise in irrigation, electrical engineering, water supply and drainage, highways and bridges and railways. The Public Works Department was later separated into individual departments, boards and authorities. The Engineering Association of Ceylon was formed in 1906 to regulate the engineering profession. It originated as a small gathering of engineers, surveyors and archaeologists in the ancient city of Anuradhapura in the North Central Province and celebrated a hundred years of existence as the Institution of Engineers Sri Lanka, in 2006 (Engineers Association of Ceylon 1906; Bingham 1921; Balasingham 1968; Perera 2002; Sivasegaram 2006, Fernando 2014[2013]; Munasinghe 2015).

The lack of interest in modern engineering shown by the popular narrative of engineering is further revealed when one turns to the second case. The documentary "A Hundred Year Renaissance" after introducing the glory of ancient engineering, moves quickly on to narrate the history of the Institution of Engineers Sri Lanka, with little or no discussion of even some of the works of modern engineering[22]. Even when the history of modern engineering is described, as can be seen in the centenary publication of the IESL: "History of Engineering in Sri Lanka: A Brief Overview", the degree of interest shown in

[21] The Ceylon Technical School was established in 1893 for technical level engineering education and was re-designated as the Ceylon Technical College in 1895. Polytechnics were introduced in main cities outside Colombo. Technical education was further strengthened by establishing faculties of engineering attached to main universities in the island since 1950 (Sivasegaram 2006).

[22] Instead the documentary introduces by its end a list of five outstanding engineers of modern times; D. J. Wimalasurendra (the pioneer in introducing hydro electricity to Sri Lanka, around whom I construct my second chapter on the Aberdeen-Laxapana Hydro Electric Scheme), E. O. E. Pereira (the 'father' of engineering education), R. H. Paul (the leader in introducing engineering education in Sri Lanka), B. D. Rampala (who contributed a great deal in improving railways in Sri Lanka) and A. N. S. Kulasinghe (who introduced the application of pre-stressed concrete and appears in the third chapter in my discussion on the Accelerated Mahaweli Development Project) (*A Hundred Year Renaissance* 2006).

describing the excellence of the tradition can be seen to be low, in comparison to the emphasis on discussing the glory of the engineering works of the forefathers of the nation.

1.2.1.2 Silences on who had expertise in pre-colonial engineering

What is noteworthy in the popular narrative is also the absence of information on 'engineers' who were involved in the design and construction of grand engineering works of ancient times. The course "History of Technology" is silent on who provided expertise. The content of the course is confined to discussing technical details of the works under consideration. This silence on technical expertise, according to some, is a common feature shared by all records of Sri Lankan history. Conducting a discussion on "professions and occupations in the early Sinhalese kingdoms" Nicholas (1956) brings to light the contradiction in Ceylonese Chronicles[23] and epigraphical records of the availability of detailed descriptions on grand engineering works on the one hand and the lack of detailed information on the professionals who designed and built them, on the other (pp. 68-69). According to De Silva (1998) there was no ancient local text on how (technical) knowledge and (technical) labour were organised in the ancient times. Kamaladasa (2007) elaborates this aspect further when she says, "this is a very strange fact that in a country where nicely written and preserved documents on Buddhism, royal dynasties and temple cultures are available, no trace can be made on the engineering approach of the ancient system on which the stability of the social structure fully depended" (p. 43).

The twenty minute and fifty eight second long documentary, "A Hundred Year Renaissance", the second case that is used as an illustration of my argument attempts, however, to fill this lacuna. By trying to visualise the lives of 'engineers' in the ancient times, the film recreates two settings; one with a man in traditional attire (most probably a 'junior engineer') arriving to the 'field' on horseback and providing instructions to his assistants by drawing diagrams on a sand plate and the other, a 'senior engineer' on a bench clarifying things to a group of 'junior engineers' who were sitting on the ground. The narrator of the documentary names the second setting as "an earlier forum of engineering practice" (*A Hundred Year Renaissance* 2006). With no reference to systems in place through which knowledge on ancient engineering was produced, disseminated within the society and transmitted from generation to generation, the film simply serves the purpose of filling a vacuum with constructed images of a nostalgic past by using the two settings mentioned above. For De Silva (1998) the complex irrigation system, a

[23] In addition to the *Mahavamsa* there are many other chronicles that describe historically significant events, objects and people (See chapter 3 for more details). *Dipavamsa* (the Chronicle of the island) and *Mahavamsa* (the Great Chronicle) are the most famous.

leading pride of Sri Lankan engineering, collapsed by the end of kingdoms in Anuradhapura and Polonnaruwa, along with the related social organisation that facilitated them.

Interestingly, two lines of discussions that could have provided hints on the question of technical expertise remain under-investigated, leading one to take an easy path as in the documentary "A Hundred Year Renaissance" where the audience was invited to allow his/her imagination to be active and visualise a setting similar to the present. A strange silence is maintained on the possible influence of technology transferred from India at different times and recorded in history texts and on the possible role of members of the Navandanna caste, the manufacturing caste, who according to Dewasiri (2008), played a role in technological affairs in pre-colonial Ceylon.

Technology transfer from India

Indian craftsmen skilled in many trades are reported to have arrived in the island at different times[24]. The *Mahavamsa*,[25] the Great Chronicle, refers to at least two of such occasions (Meyer 2006, pp. 58-59). The first contingent of a thousand families of eighteen service castes landed during the times of Prince Vijaya[26] in the sixth century BC. They reached the island along with the daughter of a Pandyan[27] king who was brought to be married to Vijaya. The second group of craftsmen belonging to eight service castes is said to have arrived in the island a few centuries later, with Bikkuni Sanghamitta who brought with her a branch of the Bo tree under which the Buddha attained enlightenment (Nicholas 1956; Gunawardana 1985a; Adithiya 1984/85). Sources other than the *Mahavamsa* have also referred to the arrival of artisans from India. Pallava artisans[28], who arrived in the island between the sixth and the eighth centuries are said to have introduced the Tamil style of architecture to build Mahayana edifices (Indrapala 2005, p. 192). Artisans had arrived in the island even later (Codrington 1909; Meyer 2006). The principal smith families in the central hills were descendants from Pandyan and other Indian

[24] According to Adithiya (1984/85), "Indo-Aryan colonists ... brought the technical know-how of town and country planning, hydrological engineering - yet in its elementary stages and all relative sciences" (p. 76). When Adithiya talks about "Indo-Aryans" he refers most probably to Prince Vijaya (see the footnote below), who is supposedly of Aryan origin, and not to artisans who arrived from South India as discussed later in the chapter. .

[25] Mahavamsa is considered as the national chronicle that carries the official history of the island. It provides the narrative of an unbroken national past from the time of Buddha in the fifth century BC to the fourth century AD.

[26] It is the common belief that Sinhalese descend from the Aryan Prince Vijaya who arrived in the island from North India in 543 BC. He became the first of the continuous list of monarchs who ruled Sri Lanka,

[27] The Pandyan Empire is one of the four Tamil dynasties (Pallava, Chola and Chera being the other three) that ruled South India from pre-historic times until end of the fifteenth century. The Pandyan kings at the height of their rule were considered the rulers of one of the wealthiest states in the world and expanded their empire into Telugu country and the Northern part of Sri Lanka (Mishra et al 2012).

[28] According to Indrapala (2005) activities of Mahayanists have led to the arrival of artisans from the Pallava kingdom. They erected Mahayana structures and produced sculptures, particularly Buddha and Bodhisayyva images. Evidence of Pallava influence in sculpture is said to be spread in the island and can be seen in Central, North Central and Eastern provinces (p. 191).

craftsmen settled in Ceylon by the kings in the fifteenth and sixteenth centuries (Codrington 1909, p. 222). As per the myth of Gajabahu, a "colonisation myth" according to Obeyesekere (1984), these smith families were the descendants of 12,000 Sinhala men who had been taken as prisoners by the Chola king Karikala to work in his dam building sites in the Kaveri Valley and brought back to the island by the Sinhala king Gajabahu, together with 12,000 more South Indians (Meyer 2006, p. 62).

Navandanna caste

In comparison to the other caste communities linked to trades such as farming, fishing cinnamon peeling, toddy tapping, the Navandanna community, the Achari caste, was specifically concerned with 'technical' work (Ryan 1953). It is arguably a kind of a pre-colonial version of modern engineering that they performed. Categorising castes as agricultural, manufacturing and service, Dewasiri (2008) lists Navandanna under the category of manufacturing castes. Codrington (1909) observes nine professional groups to serve under the Navandanna caste in the Kandyan kingdom[29]; blacksmiths, gold and silversmiths, stone polishers, stone cutters, painters, lacquerers of arrow and spear shafts, turners of ivory and buffalo horn, brass founders and carpenters. As it was with the case of other professions (e.g. gem mining, catching, taming and raising elephants, transporting goods, etc.), technology oriented professions were organised under a department in each district by the name *Kottal-badda* (De Silva 1998). While the ordinary members of Navandanna community were involved in general, with meeting the day-to-day 'technical needs' of villagers, *Kottal-badda* consisting of especially skilled members from the same community provided services for the king and the kingdom. Duty bound to do any 'technology related work' assigned, each branch of *Kottal-badda* in the Kandyan kingdom consisted of seven carpenters, five turners, five painters, fourteen arrow makers, fourteen of those who furnish and execute fine work, four silversmiths, one stone cutter and thirty-eight blacksmiths who were relegated with different responsibilities (Codrington 1909, pp. 223-24).

1.2.1.3 Silences on technological developments elsewhere

The portrayal of Sri Lankan engineering as something that originated within the island, evolved within the boundaries of the country and was introduced to other parts of the world by the Sinhalese is one of the key features of the popular narrative. The three technologies discussed in the course "History of Technology": wind-powered iron smelting, irrigation engineering and shipbuilding, are considered to

[29] With Kandy as the ruling capital, the Kandyan kingdom extended beyond the central hills into the low lands and the exact territory coming under the authority of the kingdom changed over time.

have taken such a course[30]. Were the advances in engineering a phenomenon specific to the island and the Sinhalese, a nation with engineering blood as the popular narrative of ancient engineering used to claim, or were there exchanges of knowledge that led to the emergence of equally skilled nations in the Asian and South Asian regions? Scholarly literature on ancient irrigation points to several theories that can be assumed valid for other technologies as well. They are concerned with the direction of the net flow of knowledge in the field of water engineering. Jayawardana and Wijithadhamma (2015) describe this reality of exchanges when they say, "no society is isolated or self-sufficient to claim that it has never obtained some aspects of its technology from outside sources" (p. 45). While Adithiya (1984/85) credited Indo-Aryan colonists from North India for technical know-how of Ceylonese hydraulic engineering, Bailey as far back as in 1855 in his report on irrigation assumed the knowledge to be derived through Arabian and Persian merchants who traded between Egypt and Ceylon and, Tennent assigned in 1859 the origin of such knowledge to South India or China (Jayawardana and Wijithadhamma 2015, pp. 45-46). Taking a global view Needham (1971) in his classic work on "Science and Civilisation in China" notes that the hydraulic works of great civilisations of South and East Asia combined in various proportions the Egyptian inundatory irrigation techniques and Babylonian perennial irrigation techniques to form more mixed and flexible systems (p. 365). For him South Asia shared similar advances in irrigation engineering while maintaining differences. South Asia, the region of India and Sri Lanka, differed from the regions of Europe and China with its signature reservoir (tank) culture that had started spreading in the region since the eighth century (p. 373). Exchanges between South India and Sri Lanka were the focus of investigation by Indrapala (2005) who proposed Kerala, Tamil Nadu, Southern parts of Karnataka and Andra Pradesh (i.e. South India) and Sri Lanka (SISL) as a single cultural region. For him it was a case where the island was close enough to maintain contacts with mainland India, yet not be overwhelmed by its influences. Writing on labour circulation between Sri Lanka and South India Meyer (2006) identifies these exchanges as a structural process by which the main economic, social and cultural features of the island took shape and were constantly remodelled (pp. 57-58). Scholars have identified a range of technologies and technology related social organisation such as basic metal technology, the potter's wheel, the plough, paddy cultivation, dam and tank irrigation, a greater degree of craft specialisation, etc. as main elements of civilization common to the cultural region of South India and Sri Lanka (e.g. Seneviratne 1985 in Indrapala 2005, p. 57). As noted by

[30] The course "History of Technology" includes a section on the developments of science and engineering in the ancient world such as paper and printing in ancient China, mathematics in the Arabic region and Islamic engineering. However, expertise in areas of iron smelting, irrigation and shipbuilding was not discussed in relation to other countries and was reserved only for Sri Lanka.

Gunawardana (1984) the influence of South Indian irrigation technology spread to Sri Lanka in proto-historic times, while there was a reverse flow from Sri Lanka to South India, in historical times (p. 140). However, after these initial interactions, the separate developments of more than a millennium in the field of irrigation engineering in Sri Lanka and Tamil Nadu reached their peaks at the same time, in the eleventh and the twelfth centuries (Indrapala 2005, p. 268). Even though there is no agreement from where the ancient Ceylonese learned their first lessons, there seems to be a convergence of opinion that the subsequent experience in irrigation practice gained for centuries allowed Sri Lankans to build their own types of systems and their own brand of expertise. Needham (1971) argued thus: "yet it was never in India that the fusion of the Egyptian and Babylonian patterns achieved its most complete and subtle form. This took place in Ceylon, the work of both cultures, Sinhalese and Tamil, but specifically the former" (p. 368). The discussion so far suggests two scenarios within which exchange of technological knowledge is possible. It can either be unidirectional where the knowledge flows from a technologically advanced region to a region less advanced. The inflow of knowledge to Sri Lanka at the beginning and the outflow from Sri Lanka to other countries later after attaining maturity in hydraulic engineering, can be taken as examples for the first scenario. The other scenario within which exchanges of technological know-how take place is when two technologically advanced regions learn from each other. Indrapala's (2005) reference to exchanges between South India and Sri Lanka in the eleventh and the twelfth centuries comes under this second scenario.

1.2.1.4 More questions than answers

The discussion on three key areas of silences mentioned above leaves more questions than answers. Silence on modern works of engineering leads to a set of questions. Is it that modern engineering has little to offer to mobilise the imagination of Sinhalese or even Sri Lankans as a nation, the reason for it to go unnoticed in the popular narrative of engineering? Or is it a case where references to such advances in modern engineering were suppressed[31]? The issue of how labour was organised and who was involved with technology related work leads to another series of questions. Were castes the basis of social organisation of labour since the arrival of the eighteen guilds during the time of Vijaya? One wonders exactly when the caste system was established as the mechanism of organising labour, at least

[31] Meyer (2006) observes that "social anthropologists and historian notably Gananath Obeyesekere, Stanley J. Tambiah, S. Arasaratnam, A. Liyanagamage and J. C. Holt, have underlined the strong South Indian component in medieval Sinhala culture, and pointed out how the rise of Sinhala Buddhist nationalism led most twentieth century writers to neglect or erase these developments" (p. 56).

for certain professions such as 'technology related work'[32]. If most people employed in occupations other than rice and garden cultivation were of rather recent South Indian origin, as Meyer (2006, p. 70) suggested, an important question one could ask is, who was responsible for the engineering related works done in early times? Was the division of labour in the ancient times organised in a pattern different to the structure defined by castes? Or was it a case where people in general had all the skills they needed in their day-to-day lives and groups with specialised skills were formed only when it came to very special professions? One wonders who exactly were involved with the designing and construction of engineering works of ancient times. If they were master builders, what institutional structure did they emerge from? It is interesting to know why there was no reference in the records of history to a community of people who were particularly involved with ancient irrigation engineering. If the fact that irrigation related technical work did not arrive in the island as a caste from India indicates that this profession evolved within the island, it is reasonable for one to wonder why a reference to such an authentic expertise was missed by the authors of the Chronicles and by authors of other historical texts. A relationship between the ancestors of Navandanna caste and the ancient practice of engineering was claimed by members of the present generation whom I interviewed, and this is another terrain that remains unexplored (Informants 3, 6 and 7). Is it the low caste status of Navandanna that has prevented a wider discussion of the community's involvement in technological work in pre-colonial Ceylon[33]? Or does the absence of a discussion in the records of history on the questions mentioned above mean that the discussion is avoided for some reason? What are the reasons for silences maintained? One can speculate that the link to South Indian Tamil Kingdoms from where most of the

[32] Caste is not considered as a strict guideline in understanding the profession of a person. Farming, the professional involvement attached to Govigama caste, provides the best example for this. Farming is said to have done by people belonging to all castes. Making an observation on the inability to draw a direct relationship with the caste status and the professional involvement De Silva (1998) refers to instances where Goyigama people were involved with fishing and Karavas were involved with carpentry work.

[33] In a comparison of caste rankings conducted by several Europeans over three centuries (from seventeenth to nineteenth centuries) Ryan (1953) places Navandanna (or related castes) at second, third, fourth or fifth position in the caste hierarchy. By paying attention to seven references listing caste hierarchies, five by European authors (i.e. Robert Knox, Francois Valentyn, Governor Van Gollonesse, Governor Loten and John Davy) and two by indigenous sources (i.e. Janavamsa and Niti-nighanduva) Dewasiri (2008) concludes that there is no clear cut caste hierarchy in forming the social order in Ceylon and it depends on the region under investigation, the time of consideration and arguably the possible self-interests of the authors who documented social groups. While the general experience of the members of the Navandanna community with whom I maintain contacts for the purpose of this research is of inferior treatment by other castes that occupy top positions in the caste hierarchy, scholars have referred to instances in the past where situations were not so. *Shipeen* (artisans) occupied a higher position in the society and Navandaana *achari*, according to Knox, had his own authority within his own territory (De Silva 1998). Master builders of the ancient kingdoms who were assigned major construction works were selected after careful screening, were said to have completed their tasks with assistance of divine power and were rewarded with lands and wealth by the king (Codrington 1909; Nicholas 1956; Adithiya 1984/85). This was the case during the colonial era with the colonial economy serving to strengthen manufacturing castes. The amounts of *accommodessan* grants received by *Achari* caste (e.g. headmen of smiths and foremen of stone-cutters, goldsmiths and blacksmiths), the right granted to an artisan to use the income of a cultivated land till his or her services are provided to the 'lord of the land', are taken by Dewasiri (2008) as proof for this (p. 126).

artisans arrived in the island, was problematic to mention prominently in a narrative on ancient Sri Lankan engineering, a story exclusively reserved for Sinhalese. Was the mobilisation of imagination of Sinhala nation against its enemies, against its 'other' (i.e. South Indians and Sri Lankan Tamils as per the history text) the reason for silence - on the possible advances in technology in South India, on subsequent exchanges of technological know-how between South India with Sri Lanka (as argued by Needham (1971) and Indrapala (2005)) and also on the involvement of Sri Lankan Tamils in the ancient Sri Lankan hydraulic civilisation (as argued by Needham (1971))[34]?

The lack of records, in general, prevents one from taking a tour to the ancient past in search of hints to answer the list of questions, above. The best one can do is to speculate and to suggest that the silences are maintained to present a story of Sri Lankan engineering that is in line with the conventional story of the Sinhala nation. Rather than trying to answer these questions, this dissertation intends to visit modern engineering sites in the following chapters to address the research problem and specific questions.

1.2.2 The present in the past

Writing on Buddhist heritage sites in Sri Lanka, Wijesuriya (2005) identifies the aim of his paper as to show that the 'past is living in the present'. His title resonates with the first statement of the book "The Past is a Foreign Country – Revisited" by Lowenthal (2015), 'the past is everywhere'. There seems to be a general understanding among scholars that the past we see everywhere however, is a construction of the present or in other words a case of 'the present in the past'. For Wickramasinghe (2013) heritage is an essentially present-centred cultural practice and an instrument of cultural power. "All heritage is produced completely in the present", says Lowenthal (2015, p. 325). The present selects an inheritance from an imagined past for current use and decides what should be passed on to an imagined future (Tunbridge and Ashworth 1996). Not only that the past in a discourse of heritage is constructed at present, it is being revised and reworked along with the changes of cultural, social and political needs of the present (Smith 2006, p. 4) and in relation to our present temporal and spatial experience (Harvey 2001, p. 325). It is those who control the present who control the past (Crouch and Parker 2003). While

[34] According to the official history the South Indian invasions are considered the prime reason for the collapse of the hydraulic civilisation by the thirteenth century (De Silva 2005). Advances in engineering and collaboration in exchanging know-how with Sri Lanka are features that go against the image of South Indians displayed in the narrative of Sinhala nation. It is the same case with Sri Lankan Tamils who are seen as late arrivals to the island, the civilisation of which is built by the Sinhalese. The argument by Gunawardana (1985a) that the descendants of the thousand families of eighteen guilds of workmen who arrived in the island with the daughter of Pandyan king, perhaps the first group of technically skilled personnel to arrive the island, were not included into the category of Sinhalese till the twelfth century provides material, one can argue, to understand this silence.

conducting the Ponnambalam Ramanathan Memorial Lecture at the University of Jaffna, Weerasinghe (2016) described the ways in which the present affects the past, in the narrative of Sinhala heritage.

> "When a Sri Lankan archaeologist claim, upon finding an archaeological data pertaining to, for example, prehistoric technology, that this is how ancient Sri Lankans lived, what that archaeologist is doing is not seeing the difference between the past and present. This is so simply because there was no Sri Lanka, or Sinhalese or Tamils, as we understand these terms today, in the past…… The insertion of the past in to rhetoric of 'sameness' does only one thing, that's the 'creation of a fictional unity of a collective consciousness' ….and prevent us from asking the most important critical questions from our archaeological data" (p. 38).

The popular narrative of Sri Lankan engineering shows a number of ways in which the past is made at present. Strategies in use are diverse. The present is extended to the past not just through the category of the designer or the user of ancient technology, "Sinhalese", as Weerasinghe (2016) used to suggest, but through technology itself. Not just the category of Sinhalese is assumed unchanged, technology too is treated as a category that has not changed. The three cases based on which this chapter is built show different ways the ancient technology, an unknown entity by now, is constructed as an extension of modern engineering to the past. It creates a 'fictional unity' between the two engineering traditions, ancient and modern. A brief discussion on this is held under the titles, "(modern) scientific explanation of remains", "(modern) scientific restoration of remains" and "establishing an illusion of continuity". Even though all three titles are interconnected, they are treated separately within the context of this chapter by considering the different functions they play in the popular narrative of engineering constructed here.

1.2.2.1 (Modern) scientific explanation of remains

It is common practice to use principles of modern engineering to discuss ancient technological systems. Out of the three, the case study of wind-driven iron smelting discussed in the course "History of Technology" provides the best example. How the wind blows over the wall, creating a low-pressure between the furnace top and the tuyeres of the furnace, thereby generating a heat of 1500 centigrade to smelt iron, is explained using sketches, diagrams and photographs. The unique features of ancient technological systems are also described using modern engineering principles. Two prominent examples in relation to ancient irrigation, the spillway or sluice work with European type valve pits and the low gradient maintained in *Yoda Ela*, can be noted. Spillway or sluice work used more than two thousand two hundred years ago, is one of the technological inventions considered by Gunawardana (1978; 1985b) as an important precondition for the large-scale irrigation enterprise that bloomed during the third and the ninth century AD, and has been treated both by colonial and Sri Lankan engineers as a

proof of the engineering excellence of ancient Sri Lankans, in modern terms. The low gradient of *Yoda Ela* too appears often in the popular narrative of Sri Lankan engineering. Six inches per mile gradient maintained for the first seventeen miles of *Yoda Ela*, the fifty-six-mile-long water canal constructed in the fifth century carrying excess water from *Kala Wewa* to *Tissa Wewa* in the North Central Province, is considered as a proof of the sophisticated status of engineering of ancient times (Sivasegaram 2006). This practice of providing (modern) scientific explanations to describe ancient engineering works gives one the impression that the principles of modern engineering were in continuous application and were the basis of major engineering works designed by 'engineers' of ancient times.

Exposing the presence of the present at work in constructing the past, recent work by Jayawardana and Wijithadhaama (2015) poses a challenge to the dominant understanding of sluice work. For them the colonial narrative of ancient engineering which was accepted and unchallenged up to date was too simplistic (i.e. being incomplete and also incorrect in certain cases). The 'ancient sluice' is therefore a colonial construction. By following the peripheral tradition set by some scholars of reconstructing the religious and social history by bypassing colonial interpretations, Jayawardana and Wijithadhamma too use Buddhist commentarial work to reconstruct the history of irrigation in the island and to reach the above conclusion[35]. Colonials missed capturing the full spectrum of centuries-long changes that the sluice technology underwent, they argued (p. 17). Against the popular belief held that the main function of a sluice is to release water from a reservoir by saving the earthwork of the embankments from damage (Gunawardana 1985b), Jayawardana and Wijithadhamma (2015) refer to a "control structure combined with a breaching mechanism was used as spillway" (P. 16). At least some of the spillways constructed during this long stretch of time were expected by design to be breached as a way of water management. By taking the discussion on the (mis)understanding on sluice further, where water is thought by the colonial discourse to be discharged from the bottom of the reservoir, they refer to a sluice where water is released from the surface[36]. The superiority of this type to avoid salinity when discharging water is argued by Jayawardana and Wijithadhamma as the reason for the sustainability of irrigated land for several centuries (p. 18).

[35] *Samantapasadika*, the Buddhist commentary that was translated into Sinhala in the third century BC, handed down in the same language and translated into Pali in the fifth century AD, is the source used (Jayawardana and Wijithadhamma 2015, p. 8).
[36] According to Gunawardana (1985b) sluices were positioned at various levels in ambankments.

1.2.2.2 (Modern) scientific restoration of remains

An important question one could ask in relation to this discussion on the present in the past is how this ancient tradition of engineering that was linked to the ancient hydraulic civilisation that, according to Gunawardana (2008) faded away during the ninth and the thirteenth centuries, continue to survive in the collective memory of Sinhalese and appear prominently in discussions on Sri Lankan engineering. It was during colonial rule, in general during the Dutch and in particular during the British occupation in the nineteenth and twentieth centuries, that steps were taken to repair and restore some of the engineering works of ancient times from the status of ruins (Jayawardana and Wijithadhamma 2015, pp. 6-7). In the absence of any written document to refer to or of locally accepted or developed directions or guidance to follow except for the scattered evidence in the field, what was restored, however, by colonial engineers, archaeologists and surveyors, as Kamaladasa (2007) correctly pointed out, was a modern version of ancient engineering. According to Kamaladasa "there was no record available at least giving the basic location data let alone the complicated engineering information" (p. 43). Ruins of ancient works interpreted, arranged and restored using modern engineering principles laid the initial foundation of the contemporary narrative of great engineering works of the ancient times. Detailed drawings, surveyor reports, cost-benefit financial analysis, technical manuals and engineering interpretations of the colonial era provided the basis of restoring ancient works (Jayawardana and Wijithadhamma 2015). How Anuradhapura, the ancient kingdom of technologically advanced hydraulic civilisation, was reinvented by colonial archaeology and technology provides further proof for modern scientific restoration of remains (Nissan 1989; Jeganathan 1995).

1.2.2.3 Establishing an illusion of continuity

While the course "History of Technology" maintains silence on who provided expertise to build the age-old hydraulic civilisation, the documentary "A Hundred Year Renaissance" applies an interesting strategy to fill the gap and maintain continuity. Rather than trying to present ancient engineering as a practice radically different to the practice of modern engineering, the documentary presents the story of Sri Lankan engineering as a continuation of a single practice from the present to the ancient past allowing one to look backward and apply the same tools to examine the entire spectrum. In a way it disconnects the ancient practice of engineering from the pre-colonial and ancient social context that is ambiguous at best or problematic at worst and connects with the modern practice that was established solidly since the nineteenth and the twentieth century. The documentary, while accompanying the viewer with the 'junior engineer' who is on a 'field visit' on horseback, displays a series of images of modern engineering

in between (e.g. a close view of a train, an image of a dam of a mega reservoir, a sight of a modern worksite with machinery, a view of a multi-storey building in construction, images of a bridge and a power station) and hence mixing the ancient with the modern, suggesting in a subtle way an unbroken tradition from the present to the past. Even though positioned in two distinct points on the time axis (i.e. the past and the present) it was about a single practice with common features (e.g. 'field visits', 'lectures', 'forums of engineering', etc.) which can be easily identified through a modern lens. Selection of actors for the two main roles, the 'senior engineer' and the 'junior engineer', helps to strengthen this idea of continuity even further. The same two actors, two engineering academics serving in the Sri Lankan university system, who play the roles of senior and junior engineers in the modern context, play the same roles also in the ancient setup. The same actor playing the role of 'junior engineer' in the ancient scene also plays the role at first of a student at a secondary school, enters the Institution of Engineers of Sri Lanka for further studies to later become a Chartered Engineer while the same 'senior engineer' in the ancient context conducts lectures at a modern auditorium where the 'junior engineer' metamorphosed into a modern engineering student, is also present. Modern terms such as 'engineers' and 'technical personnel' are often used when pre-colonial technical practice is discussed. Being based comprehensively on the *Mahavamsa*, Adithiya (1984/85) finds 'architects' and 'craftsmen' as the two groups of specialised labour involved with ancient 'town planning' (pp. 80-85). In the opinion of Adithiya, architects or the master builders played a role similar to that of chief engineers of modern times and were involved with "success-pre-mediated, calculated and conscious planning". Working under the instructions of master builders, an army of skilled artisans such as workers in iron, turners, bamboo workers, blacksmiths, potters, goldsmiths, painters, bricklayers, carpenters and masons provided the supportive 'technical' role.

The centenary commemoration publication of the IESL, "History of Engineering in Sri Lanka: A Brief Overview", is the best example to showcase this idea of continuity from the ancient to the modern. The chapter breakdown "From Earliest Times to 500 AD" (Chapter 2), "From 500 AD to 1500 AD" (Chapter 3), "From 1500 AD to 1800 AD (Chapter 4), "1800 AD to 1950 AD: From British Colony to Independence" (Chapter 5) and "Post-Independence from 1950 to date" (Chapter 6) leaves no gaps in the long time stretch under investigation[37]. The continuity that "extends beyond two thousand five hundred years into

[37] While Chapter 2 reserves space to discuss ancient irrigation systems and structure in detail, Chapter 3 provides a discussion on engineering works of ancient kingdoms of Anuradhapura, Polonnaruwa and Kotte and on technical details of ancient smelting technology. Chapter 4 covers the works in the Kandyan kingdom and in the Northern and Vanni regions and the works of engineering by Portuguese and Dutch colonisers. Chapter 5 is reserved entirely for British Rule and Chapter 6 to the involvements after independence.

the past “, as per the narrator of the documentary, "A Hundred Year Renaissance", allows one in the absence of its own context to position the practice of ancient engineering in a context similar to modern engineering. It is this imagination of continuation from present to past that allows the free use of modern engineering principles to describe operations of systems of ancient times and the free use of terms such as engineers and engineering profession to describe those who were involved with the ancient practice.

The close relationship with Sinhala nationalism is the third feature of the narrative of engineering I would like to pay close attention to.

1.2.3 Bridge between the narrative of engineering and Sinhala nationalism

While the identity of the Sinhalese nation is so heavily dependent on the narrative of technological excellence of the forefathers who built technologically advanced kingdoms in the past, the construction of the narrative in return, is done on a Sinhala nationalist platform. The claim by President Rajapaske that "engineering is in our (Sinhala) blood" is the ultimate testimony of this relationship.

The high degree of intimacy and interdependence between the modern narrative of ancient engineering and Sinhala nationalism however, was best exposed at the re-launch of the book *Wewa*. The monk who delivered the welcome speech thanked the Buddhist monks for attending the event at a time they found themselves busy defending the interests of *Rata* (the country) and *Jathiya* (nation), which were in danger. He was in fact referring to the process of constitutional reforms initiated by the new government elected in 2015, which the Sinhala nationalist lobby saw as a threat[38]. Delivering the main speech Madagama Dhammananda Thero, the registrar of the *Asgiriya* Chapter, saw the constitutional reform process with proposals for power sharing among ethnic communities as a threat to the unitary nature of the Sri Lankan state and the suggestions by some to award equal status for all religions as a serious threat to the prominent position occupied by Buddhism under the existing version of the constitution. He identified three groups; *sarva agamika bikkus* (bikkus who worked for inter-religious harmony), "so-called Marxists" and "gang of NGO people" who, according to Dhammananda, receive

[38] By following a pledge given at the presidential and general elections in 2015 to reform the constitution, the newly elected government appointed the Public Representations Committee on Constitutional Reform (PRCCR) on the 22nd of December 2015. The Committee which started gathering public opinion through public sitting held island wide generated enthusiasm among civil society and citizen's group and the minority communities on the one hand and fear and protest among the Sinhala nationalist lobby on the other. The Committee which gathered public viewpoints on a wide variety of topics including national flag, national anthem, nature of the state, religion, degree of power devolution and fundamental rights, itself, was seen by the Sinhala nationalist lobby as a part of a conspiracy to unseat the majority Sinhala Buddhist community from the privileged position they occupy within the Sri Lankan society (Public Representations Committee on Constitutional Reform 2016).

“Dollars, Deutch Marks and Euros” for their anti-nationalist service as those who were at the forefront of the campaign for reform. If the documentary "A Hundred Year Renaissance" established the continuity of engineering practice from the ancient to modern times, the re-launch of the book *Wewa* by moving a step further, erased the gap in time between the ancient and modern and made the narrative of ancient engineering and narrative of contemporary nationalistic politics a single dialogue. While discussing *wewa* as an "expression of engineering excellence of Sinhalese", Dhammananda referred to three other recent threats faced by the Sinhala nation. For him the Accelerated Mahaweli Development Project, the mega irrigation scheme initiated during the last part of the twentieth century, was a conspiracy by Israel, the United States of America and Europe to wipe out the *wewa*-based Sinhala culture that has survived for thousands of years. The focus of the United Nations Human Rights Council on the status of human rights and consecutive resolutions passed by the Council to ensure accountability of the government on human rights were considered by Dhammananda to be an assault against the country[39]. The allegations made at the Council were fabricated, said Dhammananda. The third case he referred to, was the supposed unfair treatment received by a group of "war heroes"[40], a group of Sri Lankan government soldiers, who were in remand custody for abducting and killing the journalist Prageeth Ekneligoda[41]. Dhammananda revealed details of his visit to the prison hospital[42], a visit he made when he was on his way to the book re-launch. Dhammananda met the suspects when he paid a visit to the prison hospital to see Galabodaaththe Gnanasara thero, the leader of *Bodu Bala Sena*, the ultra-nationalist Sinhala Buddhist group known for conducting hate campaigns against minority communities in the island[43]. It was when he visited Gnanasara who was also in prison for contempt of

[39] The series of resolutions passed at United Nations Human Rights Council with regard to the crimes committed by both parties, The Sri Lankan armed forces and the Liberation Tigers of Tamil Eelam (LTTE), at the final stages of the civil war that ended in 2009 with the defeat of the LTTE and to the post-war reconciliation process, is considered by the Sinhala nationalist lobby as an aggression towards the island. The willingness to cooperate shown by the new government to work with the United Nations to investigate allegations under a special court is seen as a betrayal of the armed forces that saved the island from LTTE terrorism.

[40] 'War heroes' is the popular title awarded by the Sinhala community to Sri Lankan government soldiers who fought and defeated the LTTE. It is a term now being used to identify members of the entire armed forces.

[41] Prageeth Ekneligoda went missing on the 24th January 2010, two days before the presidential polls in Sri Lanka. Ekneligoda campaigned for the opposition candidate who lost the election. His wife Sandya Ekneligoda's longstanding struggle to find perpetrators received attention both locally as well as internationally, and made it one of the many decisive factors that led to the defeat of Sinhala populist Mahinda Rajapakse regime at the next 2015 elections. Investigations commenced after the election of the new regime led to a special unit of army soldiers being taken into custody.

[42] It is a common practice by the powerful sections of the Sri Lankan society to fall sick and stay at the prison hospital or at a government hospital when they are ordered to serve term in prison.

[43] Bodu Bala Sena, a group led by Buddhist monks and lay people, has a track record since 2012 of hate speech and violence against other regions and ethnicities. Their anti-Muslim campaign culminated in 2014 when mobs attacked and burnt down properties belonging to Muslims living in the coastal towns of Aluthgama and Beruwala, mass scale. Gnanasara with his followers used to visit Homagama magistrate courts where the case of Ekneligoda was heard to show solidarity with the accused soldiers who according them were war heroes.

court for threatening the wife of Ekneligoda within the court premises, he said he had the opportunity of meeting the innocent soldiers who were responsible for defeating the Tamil militants - the Liberation Tigers of Tamil Eelam. For Dhammananda, the entire episode of imprisonment was staged for the benefit of 'foreigners'. The popular narrative of engineering therefore, is not only about engineering but also about Sinhala nationalist politics, a version goes beyond a description of the technical aspects of a glorious technological past perceived through a lens of modern engineering. This feature of intimacy between the two narratives has made Dhammananda's speech sound normal to the packed audience seated at the auditorium of the Librarian Services Board, a speech which under normal circumstances would have sounded totally incongruous.

1.3 Placing chapters in context

The present chapter focuses on the popular understanding of Sri Lankan engineering through an analysis of three cases, namely the content of a course offered for engineering undergraduates, details of a documentary film produced by a professional institute representing engineers and the statements made by various parties present at the re-launch of a book on ancient irrigation systems. Filled with grandiose monuments and stories of the glories of the past, the popular perception of engineering is laced with a narrative constructed in an uncomplicated manner, with no roots to a detailed socio-political context of the past. Chapter 1 sets the stage for a focused discussion in the following chapters, introducing the key idea in the thesis that pertains to the narrative of engineering as a continuous source of pride for the Sinhalese. It identifies some of the areas where a popular narrative maintains silence and explores how the gaps created by silences are made invisible by using the modern context and idiom (e.g. use of modern engineering principles, use of terminology of modern engineering and use of modern categories such as Sinhalese) to discuss the past. Chapter 1 is also a discussion on tensions in the sphere of engineering (e.g. between the pre-colonial and modern traditions) and non-engineering (e.g. how Sinhala nationalism is defined by inclusion and exclusion), thereby providing a backdrop to issues dealt with in the following chapters, that examine the links between specific modern engineering sites and developments in Sinhala nationalism at particular moments of the twentieth century. The narrative of engineering as described in Chapter 1 represents a late-twentieth-century- and- an-early-twenty-first-century static view of a continuous process of a narrative construction that is being reconstructed, modified and revised over time leaving the following chapters to establish its dynamic nature and to address the research problem in full.

Chapter 2

Imagining the Industrial Nation of Ceylon: Aberdeen - Laxapana Hydro Electric Scheme (1900-1936)

It is the common understanding that Sri Lankans - both Sinhalese and Tamils, tend to look backwards when they are in search of an identity (Daniel 1989). The island is seen as a text book case of ethno nationalism where Sinhala and Tamil nationalisms imagined themselves on the basis of an ethnic past. Independence from the British Empire which was achieved in 1948 without much nationalist mobilisation, particularly of the peasantry as in contradistinction to India, failed to create the space for a Sri Lankan identity that allowed these different groups to transcend their ethnic boundaries and visualise a technologically advanced Sri Lankan state where all ethnic communities share a common future. Spencer (2008) summarises this understanding of the long-term academic inquiry into Sri Lankan nationalism by saying that "Sri Lanka never developed a mass anti-colonial nationalist movement out of which Nehruvian developmental nationalism emerged" (p. 613). While agreeing with the obvious absence of a mass anti-colonial nationalist movement, my main interest in this chapter is to revisit the second part of this claim - the idea about the non-emergence of a discourse on developmental nationalism in Sri Lanka, as witnessed in neighbouring India. Why did the demand for an industrially developed independent Ceylon made by Ceylonese leaders such as Marcus Fernando, Anagarika Dharmapala and Cumaratunga Munidasa not evolve to be a mature 'plan' leading ultimately to the establishment of a Sri Lankan developmental nation? Or was there, in fact, such a 'plan' which escaped the gaze of historians for some reason? Exploring "Land, Labor, Capital and Sectional Interests in the National Politics of Sri Lanka" in the first part of the twentieth century, which is a study on the peasantry and agriculture, Samaraweera (1981) observes at the very end of his essay that Ceylonese nationalists "began to look towards a realistic program of industrialization for the country" only by the 1940s (p. 159).

By selecting the first mass scale hydro electricity generation scheme, the Aberdeen-Laxapana Scheme as my 'worksite' I discuss in the following sections of this chapter how a widespread campaign for a Ceylonese developmental state was, in fact, present. The discourse anchored in the Aberdeen-Laxapana

Scheme proposed an alternative future for the island against the romantic peasant agriculture based vision that succeeded and also resulted in an ethnically divided country. The hydro electric scheme that was under discussion for decades during British colonial rule and began operations in the mid twentieth century was the terrain for a range of important colonial - anti-colonial and nationalistic ideas and counter ideas that have largely gone unrecorded in the discourse of Sri Lankan nationalism so far. The biography of D. J. Wimalasurendra, the key Ceylonese behind the scheme, opens an avenue for one to visit this hidden past and to observe that a realistic programme of industrialisation was present long before the decade 1940. The Laxapana Scheme, as it popularly known now but referred to as Aberdeen-Laxapana Scheme in official colonial documents, is a 'technological' site in the broadest possible sense as defined by scholars on technology such as Kranzberg (1995), Mackenzie & Wajcman (1999[1985]) and Hughes (1986).

2.1 Background

The Aberdeen-Laxapana Scheme is a hydro electricity generation project linked to the fourth longest river in the country, the Kelani River, which starts its journey from the central hill country and reaches the sea in Colombo. It taps the potential of falling water of the Aberdeen Falls of the Kehelgamu Oya tributary and of the Laxapana Falls of the Maskeli Oya tributary to generate a combined capacity of 70,000 horse power (52.5MW). The potential of electricity to be generated by the Scheme was estimated to be much higher than the electricity demand of the entire city of Colombo at the time of planning in the early twentieth century, and the surplus was expected to illuminate and drive industries in other major towns in the island. Cheap hydro electricity produced by the Aberdeen-Laxapana Scheme was expected to replace expensive coal, diesel and gas used at the time as the main sources of generating energy[44]. These expectations, estimates, designs and plans for hydro electricity that were in circulation since the beginning of the century, materialised only much later when construction of the Scheme commenced in 1924, after the delayed adaptation of the motion to go ahead by the Legislative Council of Ceylon. The first plan, Scheme A formulated after lengthy deliberation, was rejected by the Finance Committee on the basis of high cost in 1922, and was replaced by a more efficient scheme - Scheme B, which received the approval of the Council a year later. Construction work started in 1924 but was stopped in 1927 for a number of reasons. Construction resumed in 1939 with a further delay of

[44] The streets of Colombo were provided with a few gas lamps in 1872 by the Colombo Gas and Water Company. Electricity was generated using diesel and was first introduced symbolically to the island in 1882 by illuminating the Billiard Room of the Bristol Hotel in the capital Colombo. It was provided on a commercial basis by Boustead Brothers Ltd since 1895 (Phillips 1981). There was, however, evidence that electricity was generated on a limited scale by generators of 5 to 122 horse power scale for the use of plantations even by 1885 (Sivasegaram 2006; Wickremaarachchi 2011b).

twelve years with the awarding of the contract to the Hindustan Construction Company of Bombay. The Company was, however, relieved of the contract in 1942, owing to the difficulties encountered during the war. After a supplementary estimate was approved by the State Council, work recommenced in 1945 (Arumugam 2012, p. 12). The Aberdeen-Laxapana Hydro Electric Scheme finally entered into operation in 1950, with the government-owned Department of Electrical Undertakings completing construction. It was during this long delay in construction and implementation[45] that a Ceylonese discourse on industrialisation emerged and evolved. The imagining of an industrially advanced Ceylon was made possible by the less expensive and mass scale electrical energy generation capacity of the Hydro Electric Scheme. As I discuss below, the discourse had an anti-colonial and an anti-imperialist flavour.

The Sri Lankan engineer D. J. Wimalasurendra (1874-1953) is considered to be the man who inspired and drove the Scheme. He dedicated his entire life from the days of his early career as a District Engineer of the Public Works Department to his later life as a politician in the first State Council of Ceylon[46], to seeing the Scheme pushed through, amidst numerous obstacles. In the early twentieth century he investigated in detail the possibility of developing the hydro potential of the island (Phillips 1981), did important contributions to design Scheme A of the project and formulated Scheme B more or less in the form that was implemented when the Finance Committee rejected the initial proposal (Fernando 1956). The paper he presented in 1918 at the Engineering Association of Ceylon, "Economics of Power Utilization in Ceylon" which linked hydro power with the development infrastructure for industrialisation can be considered as the first draft of a vision for a developmental nation, that evolved further during the following decades. Wimalasurendra who, out of frustration, took early retirement from the Department of Electrical Undertakings in 1930, tried his best to campaign for the recommencement of construction of the Scheme as a member of the first State Council from 1931 to 1936. Speeches made by Wimalasurendra at the State Council are a testimony to the advanced imagination of a Ceylonese developmental nation underpinned by the industrial potential provided by the Hydro Electric Scheme.

[45] One can argue that this delay of almost half a century in implementing the Scheme which under normal circumstances would have taken just four years, could have prevented a possible early industrialisation of Ceylon.

[46] Following recommendations of the Donoughmore Commission the State Council of Ceylon was established in 1931 and functioned in both an executive and legislative capacity, replacing the Legislative Council that was in existence till then. The sixty-one member State Council consisted of fifty members elected from territorial electorates, eight more nominated by the Governor to give adequate representation to minorities and a further three members who were officers of the State (Manor 1989).

Wimalasurendra was born in 1874 as a member of the Navandanna caste, the caste that historically specialised in 'engineering' according to the division of labour defined in the local caste system, occupying a lower position in the Sri Lankan caste hierarchy. His father, Don Juan Wimalasurendra, earned recognition for his master-craftsmanship and was awarded the title 'Mudaliyar' by the colonial government. His family tradition can be seen as the original influence on Wimalasurendra's practical skills. After completing his secondary education at the prominent Sinhala Buddhist school, Ananda College[47], Wimalasurendra received his initial education in engineering at the Ceylon Technical College. After joining the Public Works Department (PWD) as a Field Overseer in 1898, he was promoted to the grade of Inspector in 1902. After passing the Graduate Membership Examination of the Institute of Civil Engineers, London in India, he was promoted to Acting District Engineer in 1904. He received confirmation in 1907 and was promoted to Second Grade in 1909. In 1915 he attended Faraday House, London to take his second degree in the area of electrical engineering. After receiving exemptions for two years as a mature student, he is said to have completed the remaining two years of the four-year course in just seven months, topping his batch. In 1918 he was promoted again to the position of Grade I Engineer. During this time Wimalasurendra served in many parts of the island. He was thus a Chartered Civil Engineer as well as a Chartered Electrical Engineer, a rare achievement even by today's standards. In 1924 he was appointed Head of the Electrical Engineering Section of the Public Works Department (Arumugam 2012).

2.2 Incompatible narratives

A detailed discussion of the evolution of the Hydro Electric Scheme is required to appreciate the nuances of the imagination of a technologically advanced Ceylon – an imagination in which Wimalasurendra takes centre stage. Sources required to construct this story can be found spread across the twentieth century and can be positioned in different spheres such as technical debate among engineers, colonial administrative literature such as yearly Administration Reports and Sessional Papers published by the Colonial Government, contributions by the local members of the governing bodies such as Legislative Councils and State Councils, public speeches given by the prominent leaders of colonial Ceylon, newspaper reports and articles, biographies of D. J. Wimalasurendra and undocumented narratives of the Scheme related by local people involved in it and passed down orally from generation to generation.

[47] One of the oldest Buddhist schools in the island, founded by Henry Steel Olcott, the American of European ancestry who also co-founded the Theosophical Society.

A closer look at these sources spread over the span of half a century leads one to identify two rather incompatible narratives that highlight the important tensions that defined the final shape of developmental nationalism in the first half of the twentieth century. The clarity of the 'facts' that are relatively clear in retrospect may not have been so apparent in the heat of the controversies that surrounded this developmental imagination at the time. The two narratives suggest different dates of origin, provide different sets of milestones and highlight different players as those who played prominent roles in the development of the Scheme.

The first of the two narratives can be constructed by drawing particularly from the colonial literature available in the technical and administrative spheres. Papers on the history of the Hydro Electric Scheme presented between 1906 and 1950 at the Annual Sessions of the Engineering Association of Ceylon[48] by British engineers or by Sri Lankan engineers who served under them is one set of sources that can be used to construct this narrative (Strachan 1924; Lynn 1931; Somasundaram 1948; Phillips 1950). Sessional Papers and Administration Reports written by the Directors of the Public Works Department (PWD), Chief Electrical Engineers of the Electrical Department of the PWD and later by the Directors of the Department of Electrical Undertakings are the second set of sources. Almost all the officials who held high office during the first half of the twentieth century were British. Some of the post-independence sources from the second half of the twentieth century reflect some features of this first narrative as a result of their dependence on the colonial sources from the first half of the century[49]. The second narrative that contests the first colonial-narrative draws mainly from local sources and is interwoven closely with the life story of engineer D. J. Wimalasurendra[50]. Information can also be found to strengthen this second narrative in official colonial sources. However, when they are from colonial

[48] The Engineering Association of Ceylon was established in 1906.

[49] Fernando (1956) and Phillips (1981) are examples for this.

[50] One of the important sources is the 'inner story' of the hydro electric scheme that appeared in the Ceylon Daily News of December 3, 1930 and reproduced by the same paper on the 8th October 1974. It was the report of the speech given by D. J. Wimalasurendra at a public meeting in Galle convened by the Galle Maha Jana Sabha on the 1st December 1930. The speech contains information that do not appear in the colonial version of the Aberdeen - Laxapana Hydro Electric Scheme (Wimalasurendra 1974[1930]). "Wimalasurendra: The Story of Our Hydro Resource" by WIliam Peiris (1976), "*Wimalasurendra*: *Ape Jala Sampathe Katha Puvatha* (Shortened Translation of William Peiris (1976)) by C. A. Jayasekara (1982), "Saga of a Man of Vision: D. J. Wimalasurendra" by L. P. Goonetilleke (1976) and "D. J. Wimalasurendra: The Creator of Lankan Hydro Electricity" by E. M. Rathnapala (2009) are biographies of Wimalasurendra that are at the same time the story of Sri Lankan hydro electricity development. "Mr. D.J. Wimalasurendra" by M. Berty De Silva (2013) is one of the series of books for school children on life stories of great people. "D. J. Wimalasurendra (1874-1953)" by Ellian De Silva in “Reverend Lives Volume V” (1994) provides a short biography of Wimalasurendra and hydro electricity in Sri Lanka. The series of newspaper articles by Ruban Wickremaarchchi on the "Birth of Electricity" published in *The Island* in 2011 and 2012 on a weekly basis goes into details of hydro electric development in Ceylon (Wickremaarachchi 2011a; 2011b; 2011c; 2011d, 2011e, 2011f; 2011g; 2011h; 2012a; 2012b; 2012c; 2012d; 2012e; 2012f). "D. J. Wimalasurendra and History of the Laxapana Hydro-electric Scheme" by Thiru Arumugam (2012) provides a comprehensive account of the development of the Hydro Electric Scheme while documenting the prominent role played by Wimalasurendra in all stages.

sources they do not appear in the main text but in the annexes produced by locals[51]. There are also some colonial texts produced by Englishmen that can be used to strengthen the second narrative when they were written especially for the readership of locals[52] (e.g. motions presented for approval of the Legislative Council that was dominated by Ceylonese members).

The important feature that differentiates the two narratives from each other is the place reserved for Wimalasurendra. While narratives that use colonial sources underplay the role of Wimalasurendra, the second narrative highlights it. The year 1910 is given as the date of the origin of the Hydro Electric Scheme in the first narrative. According to this story it was in November 1910, that F. B. Rylands, the Government Electrical Engineer attached to the PWD, reported that sufficient hydropower was available near Laxapana for the total electricity requirement of the government (Lynn 1931). The second narrative, however, marking an extended history takes the origin of the Hydro Electric Scheme further back to the year 1901, and hence transfers the credit from Rylands to Wimalasurendra and to the time when the idea of generating electricity from the Laxapana falls was conceived by Wimalasurendra (Wimalasurendra 1974[1930]). While involved in a government assignment to search for minerals and particularly gold, Wimalasurendra, as an acting District Engineer, is said to have found the new 'mine of gold' in 1901 when he saw by chance the falls of Laxapana and realized their potential to generate electricity[53]. It was this thought from 1901 that had led to his investigation of the hydro electric potential of the island which he published as a technical paper in 1918. Interestingly some of these important years do not appear as milestones in the colonial narrative on the Scheme. While describing

[51] Rider, the dissenting report produced by D. S. Senanayake, A. F. Molamure, C. W. W. Kannangara, E. R. Tambimuttu and D. B. Jayatilaka, the local members of the Sub-Committee Appointed by the Select Committee on Electrical Undertakings to consider and report upon past administration and excess expenditure at Watawala, Aberdeen-Laxapana construction site is the best example for this (Rider, Sessional Paper XIX of 1929).

[52] In introducing the motion for Scheme B at the Legislative Council on 24th January 1924 J. Strachan, Director of Public Works said, "a great deal of credit is also due to Mr. Wimalasurendra for his energy and devotion to the question of harnessing water power under adverse circumstances and at his own expense, and able way in which he has faced the many criticisms by expert engineers and others was striking" (Government Electrical Undertakings 1929, p. 11).

[53] Even though Wimalasurendra identified 1901 as the year of this invention, the assignment was handed over to him in 1904 according to Arumugam (2012). After being appointed on the 22nd August 1904 as an Acting District Engineer and posted to Diyatalawa, a small town in the central hills, Wimalasurendra was assigned with two tasks; to build camps to house the South African Boer prisoners of war, and to search for prospects for minerals in the island (p. 15). A Boer prisoner Ian Van Geyzel, who was an engineer himself, was selected by the government to accompany him in his excursions in search of minerals. Wimalasurendra gives credit to his companion who had the opportunity of traveling worldwide and experiencing hydro electric power generation for suggesting the possibility of tapping Laxapana for electricity generation (Wimalasurendra 1974[1930], Wickremaarachchi 2011h, De Silva 2013). The waterfall which was known till then as Kiriwan Eliya Falls was renamed by Wimalasurendra as Laxapana to mean "one hundred thousand light bulbs". Arumugam (2012) finds this new name as a proof of Wimalasurendra's engineering genius. Based on the overall water-head (520m) and the installed capacity (100MW) of the present scheme, Arumugam calculates backwards to estimate the possible installed capacity of the water-head (129m) Wimalasurendra must have observed in 1901/1904. The figure 11.6MWs Arumugam derives as the installed capacity is, in fact, equivalent to illumination of 116,000 of 100W light bulbs.

the history of the Scheme Phillips (1950) focuses on 1910 (Rylands report), 1924 (approval of the Legislative Council and commencement of construction), 1927 (halting of construction work), 1934 (decision by the Executive Committee on Communications and Works to restart construction), 1939 (recommencement of construction) and 1942 (relieving the Indian construction company) as important milestones. 1901, the year of origin for the inspiration for hydro electricity and 1918, the year when Wimalasurendra presented the paper formulating a plan to harness and use hydro electric energy on a mass scale, attracting the attention of some of the political and social elite of the island, are missing in the colonial diary. While the local narrative highlights Wimalasurendra's prominent role in developing Schemes A and B (e.g. Rider, Sessional Papers XIX of 1929), the colonial narrative, on the contrary, features the interventions and the recommendations of foreign experts[54] as decisive steps that decided the final shape of the Hydro Scheme (e.g. Lynn 1931). According to the local narrative the superior Scheme B was proposed in June 1923 by Wimalasurendra alone. Scheme B which was highly commended by Evan Parry, the late Chief Electrical Engineer to the Government of New Zealand, for its technical superiority and better economic feasibility (Government Electrical Undertakings 1929) went through slight modifications before approval by the Legislative Council on 24th January 1924[55] .

2.3 Hydro electric politics

Another interesting contrast between the two narratives becomes apparent when the reasons for the delay in construction are discussed. The first narrative avoids discussion by just attributing it to 'various reasons' without further explanation (see Phillips 1981) or just refers to the 'unsatisfactory position' with regard to the status of the Scheme (see Lynn 1931). The second narrative, however, adds clarity to the 'mystery'. While some describe the delay within a framework of a personal conflict between Rylands and Wimalasurendra or between the white colonial government and Wimalasurendra, others point to a larger picture of institutionalised racism at work in the government service at that time. Wimalasurendra took it even further to position the delay in a discourse on the business and economic interests of the British imperialist project.

[54] Experts involved in the process were J. W. Meares (Electrical Adviser to the Government of India), F. Bolton (representative of Consulting Engineers), A. H. Preece (representative of Consulting Engineers) and Evan Parry (late Chief Electrical Engineer to the New Zealand Government).

[55] For more details see the section on "Hydro Electric Investigations and Work" by D. J. Wimalasurendra in: Hydro Electric Investigations and work in: Public Works - Part V of Administration Reports – 1923.

2.3.1 Rylands and the colonial government

While serving in the civil engineering section of the Public Works Department Wimalasurendra made proposals to develop hydro electricity, a subject that came under Rylands' purview and the proposals were not to his liking. According to this narrative the eighteen years of Rylands' service as Electrical Engineer of the PWD were ordinary ones (Wickremaarachchi 2011h). This conflict was displayed in public in 1918 during the discussion time following Wimalasurendra's speech at the Engineering Association of Ceylon. Rylands boycotted Wimalasurendra's presentation and a note he sent questioning and undermining the findings presented in the paper was read by the chair of the session (Wimalasurendra 1918). According to this narrative even the Sri Lankan members of the Association either boycotted the event (Jayasekara 1982) or at least did not participate in the discussion if they were in the audience[56] (Wimalasurendra 1918). Rylands tried his best to show that the Hydro Electric Scheme proposed by Wimalasurendra was not realistic[57]. According to Rylands, Wimalasurendra exaggerated the actually available potential[58] (Wimalasurendra 1918). Hostility against Wimalasurendra was not confined to the Hydro Electric Scheme and the problems came not only from Rylands. When civil construction work on the Scheme started at last in 1924, Wimalasurendra found to his surprise that he was by-passed and not given any responsibility. As a person who had been involved in the hydro Electric Scheme from the very outset and who had developed designs and drawings of the Scheme, and being a Charted Civil Engineer and a Charted Electrical Engineer he had expected to be in charge of the project. The responsibility of the project was handed over instead, to B. A. R. Hughes, an engineer much junior to Wimalasurendra (Arumugam 2012, p.42). The colonial government is also said to have called for explanations from Wimalasurendra for producing sample plates and cups manufactured using a locally available variety of sand, in an attempt to push the government to establish an industry to produce ceramic-ware using local resources (Jayasekara 1982). Wimalasurendra's proposal to expand the

[56] All those who have contributed to the discussion were British engineers (Wimalasurendra 1918).

[57] Rylands was proven wrong later with further studies conducted to estimate the overall potential.

[58] Wimalasurendra's estimate of 200,000 of horse power (150MW) from the island out of which 60,000 horse power (45MW) from the Aberdeen-Laxapana, itself was rejected by Rylands as a gross overestimate. For him the overall potential of electricity that could be generated from the island was just 25,200 horse power (18.9MW) and the power that could be generated from both the Aberdeen and Laxapana Falls was 5000 horse power (3.75MW). Rylands' letter dated 3rd April 1918, just a day ahead of Wimalasurendra's presentation, that was sent to the Engineering Association of Ceylon and read during the question time is a testimony to his dislike towards Wimalasurendra. While excusing himself for not being able to present at the day of the presentation as a result of a "severe chill" caused while "out motoring", Rylands disagreed with estimates produced by Wimalasurendra by arguing that the storage of water used for electricity generation vary considerably "at the height of the dry seasons". Rylands' estimates were far lower than Wimalasurendra's with an overall capacity of 25,200 horse power with the following breakdown: Mahaweliganga (18,500 horse power), Talawakelle (1,700 horse power), Aberdeen Falls (1,500 horse power), Laxapana Falls (3,500 horse power). While arguing that his estimates were based on records kept for several years by the PWD, the Department of Irrigation and the Survey Department in addition to the actual measurements done by himself, Wimalasurendra questioned in return the "scientific" basis of Rylands' claims (Wimalasurendra 1918).

Nuwaraeliya power station in 1912 was initially rejected by the District Engineer from England on the basis that it was not technically sound and the tunnel suggested would cause deaths during construction (Jayasekara 1982)[59]. Another theory forwarded by English engineers was that Wimalasurendra's proposals for generating hydro electricity by building dams across rivers would result in floods (Wickremaarachchi 2012a). It is said that the sceptics from among the engineers of the PWD, particularly those who were superiors, ridiculed his plans by calling them "journeys to the realms of fantasy" (Goonetilleke 1976)[60].

The Sri Lankan members of the Select Committee of the Legislative Council appointed to investigate reasons that halted construction in 1927 went a step further and observed that racism had led to the discrimination of talented Sri Lankans and the promotion of an unqualified British workforce, instead. While referring to the broken promise given by the government to the Legislative Council to appoint Wimalasurendra to "be entirely in charge" of the technical work of the Department of Electrical Undertakings, the group of Sri Lankan members held that "it is not unlikely that racial considerations were responsible for the circumstances which led the Government to make its decision" (Rider, Sessional Paper XIX of 1929, p. 45).

Before moving into a discussion to position the Hydro Electric Scheme within the broader context of the British imperialist project as Wimalasurendra had attempted to do during his tenure as a member of the State Council, it is useful to introduce two more actors who had stakes in the Scheme; Boustead Brothers - the company that had the monopoly of supplying electricity till the Hydro Electric Scheme became operational in the mid twentieth century, and the Consulting Engineers who looked after the financial and commercial interests of the United Kingdom in all the colonies and hence played a role in commenting on designs and estimates of the Scheme provided by the PWD.

2.3.2 Boustead Brothers and Consulting Engineers

Boustead Brothers generated electricity using fossil fuel and coal and had strong business interests that would be undermined by the Hydro Electric Scheme. As the only supplier of electricity it was the main force behind the economic activities of Ceylon by the end of nineteenth century and the first part of

[59] This task according the English District Engineer was to complete without any injuries to the labour force (Jayasekara 1982).
[60] Arthur C. Clarke, the English science fiction writer and an honorary citizen of Sri Lanka, expressed his frustration over the actions of some of his own fellow countrymen who worked against Wimalasurendra. He considered Sri Lanka to be fortunate to have such valuable natural resources and people like Wimalasurendra who understood the value of them (Jayasekara 1982).

twentieth century[61]. Services of the company started with the provision of electricity for lighting in the city of Colombo, and were extended rapidly by 1899 to operating an electric tram service, also within the city of Colombo. With the gradual increase in demand for electricity in Ceylon and with the emerging necessity to systematise operations, a new company, Colombo Electric Tramways and Lighting Company Ltd., was established in England, with Boustead Brothers continuing to act as the Ceylonese agent. Boustead Brothers had monopoly powers and a ruthless administration by a majority English staff, and was seen as a company interested only in maximum profits when it came to electricity sales and in the operation of the tram service[62] (Wickramaarchchi 2011c; 2011d; 2011e; 2011f; 2012b). By 1924 the price for electricity provided by Boustead Brothers was the highest in the region. The cost of a unit of electricity in Ceylon was 50 cents when the cost of the same in Kuala Lumpur was 20 cents, in Singapore 25-30 cents, in Bombay 12 cents and in Hong Kong 18 cents (Administration Report 1924, p.23; Wickremaarachchi 2012b). The offer by the Hydro Electric Scheme to produce a unit of electricity for 2.5 cents and to sell a unit at 2.75 cents was obviously a threat to the business interests of the company. Boustead Brothers' profit-making capability and ability to get things done was echoed in the process of negotiations conducted by the Government to buy the whole company, except for the tram service. The transaction, which ended up in favour of Boustead Brothers, saw the Sub-Committee appointed in 1928 by the Select Committee of Legislative Council to look into the issues related to the Hydro Electric Scheme note that the company not only "(made) huge profits from its monopoly but when it was threatened with extinction by competition with Government, negotiated very cleverly with its competitor to sell its own undertaking for a very large figure"[63]. The Committee was "thus of opinion that the purchase of the Colombo Electric Tramway and Lighting Company's Plant and Distribution

[61] Boustead Brothers was registered in Britain in 1891 under United Planters' Company of Ceylon Ltd. With a ten year agreement signed in 1895 with the Ceylonese Government that was extended again and again, Boustead Brothers catered for the electricity requirements of the city of Colombo and outstations (Wickremaarachchi 2011c; 2011d).

[62] There was a regular flow of public complaints against the company. The Mayor of the city of Colombo was criticized by members of the Colombo Urban Council for special favours granted to Boustead Brothers. Disagreements and debates occurred among the lawyers of the urban council, members of chambers of commerce and staff of the telegraph department regarding the activities of Boustead Brothers. The exploitation of tram workers by the company resulted in workers getting organised against the administration. The Ceylon Workers Union led by A. E. Goonasinghe was capable of leading tram workers of the Colombo Electric Tramways and Lighting Company in a strike action in 1929. The Administration of the company rejected the main demand by workers for a higher salary. The effort to suppress the strike by tram workers resulted in the public being provoked to set fire to the Maradana Police Station and five deaths (Wickremaarachchi 2011d; 2011e; 2011f).

[63] Against the offer by the government in 1927 to buy the generation plant and the distribution system for a cost of 150,000 pounds in stages, Boustead Brothers made two alternative offers either to sell for 280,000 pounds as from 1st July 1927 or to sell for 240,000 pounds as from 1st January 1928. The attempt by the Government to go with the first offer and buy both systems from 1st July 1927 for a cost of 250,000 pounds had failed, resulting after further negotiation in the purchase of the plant and the distribution system by the Government at a cost of 245,000 from 1st January 1928, an amount exceeding by 5000 pounds the company's earlier offer.

System has been a great loss to the country without any real compensatory gain"[64] (Rider, Sessional Paper XIX of 1929, p. 44).

The question of whether the Consulting Engineers had business interests in favour of or against the Hydro Electric Scheme has no straightforward answer. Their opinion, however, had a strong impact on the survival of the Scheme as a project under construction. Consulting Engineers were appointed by the Crown Agents whose duties included the preparation of designs, the giving advice on large public works, the preparation of specifications and the purchase and inspection of stores. The firm Preece, Cardew and Rider (PCR) was the Consulting Engineers employed by the Crown Agents on electrical and mechanical subjects. Preece, Cardew and Riders' consultancy services were obtained for all matters related to electrical and mechanical works conducted by the PWD. Overall guidance of all affairs of the Hydro Electric Scheme was considered a part of their job. The opinion expressed by the above mentioned Sub-Committee of the Legislative Council on the conduct of Consulting Engineers provides material to position the interests of PCR within the overall scheme of colonial interests in the colony. The team of local Legislative Councillors questioned the Consulting Engineers on two areas when the Hydro Electric Scheme ran into crisis in 1927: neglecting the general advisory role expected to be played by the Consulting Engineers in the operation of the Scheme; and earning commissions based on an agreement that works against the interests of the Ceylonese[65]. The three point five percent commission they received for all consultancy work conducted in relation to the Hydro Electric Scheme can be seen as a motivation for the Consulting Engineers to see that the Scheme succeeded[66] (Rider, Sessional Paper XIX of 1929).

[64] In addition to securing a higher price the company was also successful in reaching with the Government a twenty one year agreement to supply electricity for the working of the tramway system at a rate of 5 cents per unit while the price of generating a unit remained between 11 and 12 cents.

[65] The issue of the negligence in their role as consultants surfaced when Consulting Engineers disclaimed the responsibility for civil construction work that ran into trouble resulting in work being stopped in May 1927. Legislative Councilors of the Committee were of the opinion that that "it was all along understood, until the execution of the Scheme was known to be in difficulties, that the Consulting Engineers had to "co-ordinate" the various sections of the Scheme "carry out inspection" and were to do "advisory work generally in connection with the Scheme". During four visits to the site during construction (from April 1924 to May 1927) the Consulting Engineers were said to make no indication that civil engineering work was not being carried out satisfactorily, but extended consent with deviations to the original plans made by Wimalasurendra. According to the members of the Committee "it was expressly stipulated that they should pay periodical visits and satisfy themselves that the work as a whole was proceeding satisfactorily" and by not doing so "have failed in this duty and have thus become responsible for not giving the country a timely warning" and hence are "severely to blame for the present failure" (Rider, Sessional Paper XIX of 1929).

[66] The higher the estimate for which Consulting Engineers looked at and provided opinion, the higher the commission they received. In 1929, members of the Legislative Council were critical of this arrangement of providing commission based merely on the size of the estimate for which Consulting Engineers were supposed to provide opinion. They recommended that special care to be taken "to see to it that the remuneration of the Consulting Engineers is certain, definite, exact and commensurate

2.3.3 'Big Business': Business interests of the British Empire

By the time Wimalasurendra reached mid-career as a member of the State Council he attempted to define the grand alliance that worked against the Hydro Electric Scheme that went beyond racial biases and the business interests of the immediate stakeholders. For him the cause of delay was linked directly to the business and economic interests of the British colonial State. Protecting the business interests of the British Empire by not allowing competitors to emerge was a common policy adopted in colonies, in general. The proposal to produce energy mass scale (i.e. power alcohol) using molasses, a by-product of the Indian sugar industry and considered till then as a waste product, faced a similar fate as that of the Hydro Electric Scheme (Nehru 1946). In a series of speeches made at the State Council, especially during 1933 and 1934, Wimalasurendra identified the broad alliance that worked against the Hydro Electric Scheme. He used different names at times to identify this alliance; "Big Business"[67], "Oil and Coal Combine"[68], "Almighty Oil Interests"[69], "Big Business and Alien Combines"[70], "Imperialistic Element"[71], "Big Business Element"[72] and "Big Business Party"[73]. While critiquing the broader alliance he referred at different times to different agents who represented different aspects of the overall business interests of the British colonials. He was referring specifically to the oil and coal business interests of the British Empire which were equivalent to annual sales of nine million rupees and which would be under threat if the Hydro Electric Scheme succeeded. While employing delaying tactics, the colonial government tried secretly to sell the partly constructed Hydro Electric Scheme at a deflated price to a British company when the demand by the locals to recommence construction grew. In August 1933 Wimalasurendra named the Whitehall Securities Corporation as a symbol of 'Big Business' which had made a bid to buy the Hydro Electric Scheme for a "mere song"[74], but failed as a result of the combined effort of a few

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with the duties or responsibilities which they may be called upon to perform or discharge". This comment was made in reference to the commission of Rs. 175,000 the Consulting Engineers received for the Kolonnawa Plant and for the Colombo New Distribution System, over and above the commission of Rs. 240,000 stipulated for the Hydro Electric Scheme B, Stage 1. It is said by the members of the Legislative Council that "the only service that the Consulting Engineers had to perform in order to become entitled to the commission of the New Distribution System considered in approving with very slight modifications indeed, the plans prepared by the PWD; and even if the modifications were not made it was unlikely that any serious consequences would have occurred". The broader issue that was under investigation by the members of the Council was the high expenditure made towards the Hydro Electric Scheme, that ultimately resulted in the suspension of construction in 1927.

[67] State Council debates on the 22nd August 1933 (Wimalasurendra 1933b, p.1662)
[68] State Council debates on the 27th June 1934 (Wimalasurendra 1934a, p.1161)
[69] Stare Council debates on the 27th June 1934 (Ibid, p.1162)
[70] State Council debates on the 11th September 1934 (Wimalasurendra 1934b, p.2372)
[71] State Council debates on the 23rd November 1934 (Wimalasurendra 1934c, p. 2910)
[72] Ibid
[73] State Council debates on the 23rd November 1934 (Wimalasurendra 1934c, p. 2913)
[74] State Council debates on the 22nd August 1933 (Wimalasurendra 1933b, p. 1662)

influential local members of the Legislative Council[75]. The offer to purchase which was kept confidential was smuggled out and made public by D. S. Senanayake at the Legislative Council, a process in which the colonial government suspected Wimalasurendra to have played a main role[76]. Striking similarities can be drawn once again between the Ceylonese and the Indian experiences. Tata, which in 1911 took the initiative of heavy industry by starting steel and iron works but languished later[77] was in danger of passing into the hands of British debenture holders till national pressure saved it (Nehru 1946, p. 353). Wimalasurendra continued to identify the Minister of Communications and Works as a local agent of Big Business on several occasions. Wimalasurendra used to have a long-drawn conflict with the Minister of Communication and Works for taking sides with the white members of the Executive Committee of Communications and Works and contributing to the delay in recommencement of the Scheme. Describing how the alliance of Big Business operated covertly he said that the "Big Business in this country realizes that [his - Wimalasurendra's] constant vigilance in the public interest has exposed their secret and crafty designs on the national assets of this country" and that it is "a vile conspiracy" hatched with the Minister[78]. Wimalasurendra included several other individuals and groups to this alliance of Big Business at the debate on the Electricity Board of Control in November 1934. He saw the proposal by the Executive Committee of Communications and Works to the State Council to form an 'independent' Electricity Board independent from the influence of the people's representatives of the Ceylonese, in other words the influence of the State Council, as another attempt by Big Business to nullify the influence exerted by the local members of the State Council to push for an early recommencement of the hydro scheme and to keep the scheme in the hands of Ceylonese as a national asset. The proposal was to transfer all matters handled by the Department of Electrical Undertakings including the Hydro Electric Scheme to the control of the proposed Electricity Board. The proposal, based on a recommendation of the Consulting Engineers, proposed that to "preserve the independence of the Board the Executive Committee of Communications and Works and the State Council itself should not be

[75] In a letter written in 1962 to his grandson Haren Celvadurai, by Prof. C. Suntharalingam, a member of the Legislative Council, informs that the document was secreted away from the safe based on inside information provided by Oliver Goonetilleke, the Sri Lankan who held the post of the Colonial Auditor by then. Naming Wimalasurendra as the best Ceylonese electrical engineer in the island by then, Suntharalingam relates to his grandson that not many realised the trouble they (i.e. D. S. Senanayake, Oliver Goonetilleke and himself) took to save Ceylon's Hydro Electric resources from being made over to European companies and imperial concessionaires (The Suntharalingam Saga, 1964).

[76] According to Jayasekara (1982) the colonial government forced Wimalasurendra to send his papers of retirement suspecting the role he had played to obtain the confidential document and passing it to the hands of D. S. Senanayake (pp. 52, 56-57).

[77] When Tata Steel and Iron Works were in difficulties during the 1920s it was the Congress Party in the Central Legislature that pushed the colonial Government for an aid package (Nehru 1946, p. 403).

[78] State Council debates on the 11th September 1934 (Wimalasurendra 1934b, p. 2372)

represented on the Board"[79]. The opinion given by the Consulting Engineers recommending an 'independent' Board was based on incorrect information, argued Wimalasurendra, and therefore indicated a role played by Consulting Engineers themselves in support of Big Business[80]. He then named the British members of the Executive Committee of Communications and Works along with the Minister as members of the Imperialistic or Big Business Element, going on to say it was well known in the country[81]. In the same debate he named two more important agents of Big Business, the colonial government and the British officials. Wimalasurendra attributed the incompetency in handling the Hydro Electric Scheme to the Government and its officials saying that he could "quote chapter and verse to show that it was the Government officers who bungled it" (Wimalasurendra 1934c, p. 2917). Wimalasurendra exposed another element of Big Business during the debate on "The Appropriation Ordinance" in September 1934. It was when he referred to the sale of electricity by the Government to Boustead Brothers in bulk at a cheap rate while selling to the general public at a much higher rate. "When Big Business wanted current [electricity] in lump, it has given at a cheap rate to enable them to show bigger profits to their shareholders, while the poor man who has to pay his hard-earned cash has been mulcted to accommodate Big Business by charging him such a high rate as forty cents per unit for lighting", he said (Wimalasurendra 1934b, p.2375). However, Wimalasurendra's main attack against Big Business was his lengthy speech at the debate on "Diesel Train Units" in 1934 where he spoke at length against the proposal by the Minister of Communications and Works to import three diesel electric trains. Comparing in detail the three technologies, steam engines (fuelled by coal), diesel-electric engines (fuelled by diesel to generate electricity to drive the engine) and electric engines (driven by hydro electricity), and arguing in favour of the cheapest option, electric engines driven by hydro electricity, he saw no point in importing diesel electric trains at a huge cost if the Hydro Electric Scheme could start producing electricity in four or five years time and the railway system could be electrified thereafter to run trains using hydro electricity. According to him the proposal for diesel electric trains represented the interests of Big Business. By warning that the "oil and coal combine that is running amok in [the]

[79] State Council debates on the 23rd November 1934 (Wimalasurendra 1934c, p. 2913)

[80] Consulting Engineers recommended that the Electricity Board of Control of Ceylon should follow the example of such other Boards in the world and took the Ontario Commission and the Nova Scotia Power Board as two cases to suggest that the Ceylonese Board should also be independent from the influence of the State Councils. However, Wimalasurendra pointed out that both the Ontario Commission and the Nova Scotia Power Board were represented by the members of State Councils of the respective States and hence labelling the opinion of the Consulting Engineers as an attempt in favour of Big Business to misguide the members of the State Council (Ibid, p. 2915).

[81] The four to one vote taken at the Executive Committee of Communications and Works to forward the proposal for an independent Board was hurriedly taken on a date where out of the eight members, three who opposed this proposal were absent. Wimalasurendra saw this move to be engineered by the members representing the Big Business in the Executive Committee (Ibid, p. 2910).

country.. [was] trying to frustrate [the] attempt to develop the Laxapana water power", Wimalasurendra concluded his speech by suggesting, "let the representatives of the people bear firmly in mind that on no account should they sacrifice [their] invaluable national asset of cheap water power on the altar of the Moloch of the Almighty Oil Interests". By referring to the equivalent case of power alcohol in India, Nehru (1946) went on to identify the immediate agent of the 'Big Business', the Burmah Oil Company, the Scottish oil business founded to develop oil fields in the Indian subcontinent[82]. The speech by Wimalasurendra generated interest among members of the State Council[83] and received wide publicity in print media the following day[84].

The Hydro Electric Scheme, hence, symbolised the desire for industrialisation and development and also the collective frustration and anger against the colonial government which remained an obstacle to the vision of a developmental nation. Shifting priorities of 'Big Business' were recorded in 1940s allowing the British Empire to relax its policy. It was only in 1941, in the third year of the Second World War and the year in which Japanese conquest of Burma resulted in cutting off oil supplies from Burma to India, that permission was granted at last to produce power alcohol (ibid, p. 403). This was exactly the time during which (i.e. 1945) proper construction of the Hydro Electric Scheme was restarted, indicating most probably that the same business interests of Empire were at play in both colonies.

Protectionism and securing the interests of "Big Business" were not confined to energy. Ensuring the continuous supply of raw material from colonies under British occupation on the one hand and using them as markets for England's industrial goods on the other, were the two sides of the imperial strategy. The British market was not fully open for products from the colonies while the market in the colonies was opened to products from industrialized Britain. India provides a good case to understand the wide ranging interests of "Big Business". According to the Cambridge Economic History of India, "interested not in India's financial and industrial development but in Britain's, the colonial government .... followed policies from which British industry and financial institutions were the primary beneficiaries" (Hurd

[82] See http://www.fundinguniverse.com/company-histories/burmah-castrol-plc-history/

[83] When Wimalasurendra concluded his speech declaring that the Oil and the Coal Combine was behind the scheme to import diesel electric engines, A. E. Goonesinha, the prominent trade unionist, was reported to respond by saying "schemes behind schemes", referring to the scheme of the Big Business representing oil interests of the colonial Government to import diesel electric engines at a time the Hydro Electric Scheme, when completed, promised electrification of the railway system. E. W. Perera named the agents of Big Business as the "Capital Committee". G. E. de Silva communicated his appreciation by saying that "the honorable member for Ratnapura has adduced very important arguments which the Minister might take into consideration" (Wimalasurendra 1934a, pp. 1161-1162).

[84] State Council debates were reported in daily newspapers the following day. G. E. de Silva reminded his colleagues of this fact when he told the Council at the end of Wimalasurendra's speech that the members who were absent and were unable to listen to Wimalasurendra could still go through his arguments published in newspaper the next day (Wimalasurendra 1934a, p.1162).

1989[1983], p. 749). Even though the Indian railway workshops had proved the capability of manufacturing competitively-priced locomotives, for example, the number manufactured in India from 1865 to 1941 was just seven hundred in comparison to the twelve thousand locomotives exported by British firms to India (Ibid). The plans by the Tata Iron and Steel Works to manufacture locomotives locally couldn't be carried out as a result of the colonial government's patronage of British locomotives, observed Nehru (1946, p. 410). He lists a number of possible industrial activities that were affected. Pre-war proposals to manufacture locomotives, railway cars, motor trucks and armoured vehicles were turned down by the colonial government (p. 411). The wartime proposals by the Indians to produce vaccines, medicines and drugs by Indian institutions at a much smaller cost when imports from Germany stopped, too were turned down by the colonial government on the grounds that very urgent medicines could be obtained through Imperial Chemical Industries (p. 412).

2.4 The developmental nation: the Ceylonese case

The lack of scholarly focus on the Hydro Electric Scheme, a project which was instrumental in mobilising the imagination of Ceylonese for a new future, has resulted in the history of the early twentieth century Ceylon as documented so far, being incomplete. The role it played as a site which cultivated anti-imperial sentiments among a cross section of the Ceylonese population as discussed above, as well as a terrain which helped mobilise the imagination of the Ceylonese for a Ceylonese developmental state as discussed below, is therefore missing. The absence of the Hydro Electric Scheme from the history of early twentieth century Ceylon pushes one to treat contributions made by Marcus Fernando, Anagarika Dharmapala and Cumaratunga Munidasa to canvass for an industrially advanced Ceylon as isolated incidences and not as steps of a process that built up with time[85]. While the ground was in preparation for an ethno nationalist state, the site of the Hydro Electric Scheme had created a new space open to form a developmental state. How the discourse on developmental nationalism emerged around the Hydro Electric Scheme, spread and confronted resistance within a broader socio-political-economic context is discussed below.

[85] As it is discussed in the rest of this Chapter, both Marcus Fernando and Cumaratunga Munidasa were influenced by the ideas forwarded by Wimalasurendra. The initial ideas of industrialization presented on a ground of Sinhala nationalism for example by Dharmapala, seems to have transformed into a clear narrative of developmental nationalism by 1920s and 1930s, thanks to the contributions made by Wimalasurendra.

2.4.1 Background: Early twentieth century Ceylon

The early part of the twentieth century was marked by rifts among different groups and communities for social, political and economic power (De Silva 1973). Social organisation governed by divisions based on classes[86], castes[87], ethnicities[88], religions[89] and regions[90] is identified by Gunasinghe (2011) as a characteristic common to the entire South Asian region (p. 23). It was a time of uncertainty as well as a time of opportunity. The power play among these groups decided the nature of the Ceylonese state to be formed after independence and the features of Ceylonese nationalism that were to emerge. The kinds of socio-political movements that emerged in Ceylon and the kinds that did not, were defined to a great extent by the alliances and the conflicts among different caste and class groups on the one hand and by the ways in which the Ceylonese elite and the non-elites responded to the agenda of British colonials, on the other. The brief description below on "caste and class landscape" and "socio-political movements" is confined to the exploration of the fate of the Ceylonese discourse on developmental nationalism. The low caste background of Wimalasurendra makes the discourse on caste especially relevant.

2.4.1.1 Caste and class landscape

Opportunities offered by the colonial economy and by certain caste groups underscore the instability of the hierarchical caste system that was in place[91] where Govigama was considered superior in comparison to castes such as Karava, Salagama and Durava. Navandanna, the caste Wimalasurendra belonged to, was considered one of the inferior castes. The accumulation of economic and political power by the elites of the Karava caste in comparison to the elites of Govigama and hence the threat posed to the superiority of the traditionally powerful Govigama elites who were not willing to surrender its position of advantage and its widely acknowledged caste primacy makes the early part of the

[86] Class division between the elites of the traditional land owning class and the emerging capitalist class who responded fast to the opportunities created by the colonial economy was one of the prominent frictions.

[87] Division between the Govigama caste at the top of the caste hierarchy and the other castes that occupied positions below can be taken as an example.

[88]. Divisions were among Sinhalese, Tamils and Muslims.

[89] Divisions were among Buddhists, Christians, Hindus and Islamists.

[90] The rift between the elites of the upcountry Sinhalese and the low country Sinhalese, even though as not as stark as the caste rift, went to the extent of Kandyan elite demanding in 1927, in the process of constitutional reforms, a federal state for the hilly region in the middle of the island (De Silva 1973). Sinhala elite living in the low country in the coastal regions of the island who were familiar and hence more at ease with the colonial rule from the times of Portuguese and Dutch had easy access to land and business opportunities opened in the hill country when the Sinhala Kingdom at the central hills fell much later to the British in the 19th century.

[91] Friction among castes during the British Rule is well documented by a range of authors such as Ryan (1953); Pieris (1956); Singer (1964); Jiggins (1979); De Silva (1998); Rogers (2004a; 2004b;); Wickramasinghe (2014a); Gunasinghe (2007); Jayawardena (2007); Roberts (2007); Silva et al (2009), etc..

twentieth century look like a period governed by a battle between the elites of the Govigamas and Karavas (Roberts 2007, p.133). The Karava elite held ownership of most plantations controlled by Sinhalese and had a strong representation at the Legislative Council by the 1920s[92]. This trend, however, changed with the extension of territorial representation and the introduction of universal suffrage in 1931 bringing majority Govigama back in to dominance in the political sphere (Jayawardena 2007, p. 345; Roberts 2007). For Jayawardena (2007) this early twentieth century phenomenon was in fact a clash between classes rather than castes. Jayewardena argues though it expressed itself in terms of caste and as a rivalry between the elites of Govigama and Karava, it had features that can be better understood as arising from the rivalry between two sections of the Ceylonese bourgeoisie - the old land owning rich (mainly Govigama) and the new-rich merchant capitalists (heavily Karava but including persons of all the major caste groups) (p. 168-9). While capitalism in Europe emerged through primitive accumulation based on commerce and colonial plunder and subsequent investment in strengthening industries, the Ceylonese bourgeoisie, according to Jayawardena (2007), acquired wealth through commercial opportunities made available by the colonial economy (p. xviii). The wealth of the newly rich, earned as renters of different products and services such as paddy, arrack, fish, ferry, gaming, etc. of which arrack renting was by far the most lucrative, was invested quickly in plantations, mines, urban property and the education of the next generations (p. xxii). The relative growth of capitalism the island witnessed resulted in the formation of a class-based society (i.e. emergence of a bourgeoisie, a petty bourgeoisie and a working class) (Gunasinghe 2011, p. 25). Ceylon under colonial rule was seen as an era of transition from a feudal to a capitalist society[93].

[92] The restricted voting rights favoured the election of Karava members and Karava presence at the Council was further strengthen by Governor's choice of nominated members (Jayawardena 2007, p. 345; Roberts 2007). This space that was open for the elites of non-Govigama castes for social, economic and political upward mobility had also led a trend of caste campaigns both by the Govigama and non-Govigama caste lobbies to rewrite caste histories to invent high caste status. A list of caste pamphlets and caste literature during 1864-1930 is given in Appendix 3 of Roberts (2007). The "Kara-Goi" debate was one such controversy that occurred between the Govigama and the Karava castes.

[93] Roberts (2007) and Jayawardena (2007) brought strong cases representing the diametrically opposite positions of the debate on the decisiveness of caste versus class. Emphasizing the primacy of caste dimension Roberts was of the opinion that "it would be erroneous to regard the extension of the capitalist mode of production in British times as the root of this social competition". Explaining the nature of caste consciousness spread widely across the Ceylonese society Roberts (2007) considered it to be "equally erroneous to treat it as a purely elite encounter, far removed from the concerns of the 'simple villager'". However, presenting a strong case on how the new rich Govigamas who were considered by the old rich from the same caste as "nobodies", became "somebodies" to join the emerging bourgeoisie of Ceylon, Jayawardena (2007) states that "in order to understand the process of historical change, [it is needed] to turn the caste issues on its head, recognizing the rise of bourgeoisie as a key event of the nineteenth [and the twentieth] century and the consequent shifts in the caste system as secondary" (p. 170). "With the spread of capitalism, caste, which had been openly acknowledged in the public sphere as an accepted from of occupational differentiation and hierarchy, retreated to the private domain where it survived", observed Jayawardena (2007, p. xxxiv). British approach towards caste to consider caste as an expression of backwardness of people of the colonies and to regard caste with abhorrence played a more important role in causing this retreat (Roberts 2007, p. 141).

According to Gunasinghe, both caste and class, continued to exist and distort each other through interpenetration, resulting in a bourgeoisie still riddled with caste distinctions and caste groups further stratified internally along class lines (Jayawardena 2007, p. 170).

2.4.1.2 Socio-political movements

This time span can best be seen as an important stretch of Ceylonese history where different socio political movements of anti-colonial nature were in action, some taking a more radical position and others of more collaborative nature and some at a mature stage and others just emerging. The degree of influence of these agitations decided the ultimate shape of the nationalism and the nation-state we see today. At the Legislative Council level (till 1931) and from then onwards at the State Council level were the campaigns for constitutional reforms[94]. Campaigns launched mainly by the new rich were of limited scope and were for greater political representation for locals, for equal opportunities for the emergent classes led by the elites of the Karava caste and for limited social reforms (Jayawardena 2007, p.321). The campaign for reforms was not a united front against the British government as signified by conflicts among castes and classes. One of the ongoing battles was for the Sinhalese seat in the Legislative Council between the old rich and the new rich, where the rift began in 1878, and the new rich unsuccessfully fought for it each time the seat occupied by the old rich fell vacant in 1881, 1888, 1895, 1900 and 1905. The constitution underwent reforms only on a few occasions, for example in 1889[95], in 1911-12[96] and in 1931[97]. In 1911-12 a limited franchise was introduced to elect a few members to the Legislative Council with a special slot to 'educated Ceylonese' which brought the rift between the old rich and the new rich to a new level. Reforms in 1931 which introduced the State Council to replace the previous Legislative Council brought important changes to the old constitution[98]. Campaigns for

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Public expression of caste, therefore, was against the refinement and sophistication the emerging bourgeoisie would like to display as a community of members from all castes.

[94] From the introduction of the Legislative Council in 1833 Ceylon had the most static constitution for the longest time hinting lack of agitation than agitation for reforms compared to other colonies of Britain (De Silva 2005).

[95] The Council of fifteen members consisted of nine senior government 'officials' and six 'unofficials' appointed by the Governor up until 1889 where two more additional 'unofficial' seats were created for Kandyans and Muslims in addition to the low-country Sinhalese (De Silva 2005).

[96] Under 1911-12 Crewe-McCallum reforms Legislative Council consisted of eleven officials to ten unofficials. Of the ten officials six were to be nominated to represent ethnic groups and four to be elected on a restrictive franchise of whom two Europeans, one Burger and one from 'educated Ceylonese' (Jayawardena 2007, p.334).

[97] By following the recommendations of the Donoughmore Commission in 1927, a fifty six member State Council was established in 1931 with fifty elected members and six members nominated by the Governor. Election of the fifty members was done on the basis of universal suffrage where all men and women above the age of twenty one were allowed to vote (De Silva 2005; Jayawardena 2007, pp. 345, 347).

[98] Even though the introduction of universal franchise to elect fifty out of fifty six members to the Council was a significant step towards democratizing governance, it was strongly contested by the up country Kandyan Sinhalese, minority castes (Specially, Karava, Salagama and Durava) and the ethnicities (Tamils in particular) who enjoyed broader representation at the Legislative

constitutional reforms didn't cross the boundaries of Legislative and State Councils and become a mass movement aiming at independence. Mass agitation, however, could be seen as a movement of Buddhist revival that took shape in the latter part of the nineteenth century. The movement didn't confront colonial occupation or the business interests of the colonizer head on, but challenged one of the secondary objectives of colonialism, the propagation of Protestant Christianity. Gombrich and Obeyesekere (1988) identify two sets of historical conditions that led to the formation of this movement (p.203). The Buddhist revival movement which Gombrich and Obeyesekere do not see as a revival of the same Buddhism that existed before the arrival of colonials, but as a transformed version, "Protestant Buddhism", they argue, emerged as a reaction to the activities of the missionaries of Protestant Christianity[99]. What went hand in hand with the movement of Buddhist agitation was the promotion of a new social morality based on the reinterpretation of Buddhist doctrinal values. Anagarika Dharmapala, who had a more radical approach in comparison to most of the political and social elite who were loyal to British at the time, was the leading figure who mixed social morality with Buddhist agitation and was hence instrumental in politicizing the movement (Jayawardena 2007, p. 270). Dharmapala contrasted Buddhist values with the moral failings of missionaries such as meat and alcohol consumption and lack of a norm against killing animals (Gombrich and Obeyesekere 1988, pp. 212-13). This was the foundation on which the temperance movement was built up, the most significant nationalist agitation of the early twentieth century. It was sustained for a relatively long period of time, brought the elite and the masses together and received enthusiastic responses both in the towns and villages. The temperance movement reached its peak in the years 1903-05 and 1911-14 and faded away with the Sinhala Muslim riots where many of the leaders of the movement from the new rich class were murdered or died in imprisonment (De Silva 1973, p.382). The third agitation the island witnessed in the early twentieth century was the emergence of the labour movement through the organisation of trade unions. It started off in 1920s as a series of industrial disputes among the railway workers and then as a major strike in the Colombo harbour. A general strike swept the city of Colombo in February and March 1923 under the leadership of Ceylon Labour Union led by A. E. Goonesinghe (De Silva 1973, pp.403-404). The effort to suppress the strike by the workers of the Colombo Electric Tramways and Lighting Company in 1929 mentioned above, resulted in the public being provoked and setting fire to the

Council so far (Jayawardena 2007; Roberts 2007; De Silva 2005). Universal suffrage, a tool that favours the simple criteria of majority representation brought low country Govigama Sinhalese to political power.

[99] Establishment of close contacts with the West in the form of arrival of modern knowledge, introduction of western type of education, spread of printing and the increased use of literacy and the rise of a Sinhala middle class and the embourgeoisiement of the Sinhala society, the arrival of the conditions of modernity, is seen as the context that facilitated this movement, the emergence of Protestant Buddhism (Gombrich and Obeyesekere 1988). Buddhist monks took the leadership in the Buddhist revival movement which was marked by famous debates between the Buddhist lobby and the Protestant lobby.

Maradana Police Station and also five deaths (Wickremaarachchi 2011d)[100]. The imagination of an industrialised Ceylon that contained roots of a Ceylonese nation and a Ceylonese developmental state also took shape during this same stretch of time.

2.4.2 Developmental nationalism: from Marcus Fernando to Wimalasurendra[101]

The need for industrialization and the necessity of introducing relevant infrastructure were under discussion in the early twentieth century, years before the possibility of tapping the potential of Aberdeen and Laxapana Falls was first discussed. At the election in 1911 for the newly introduced "educated Ceylonese seat" of the Legislative Council, Marcus Fernando, representing the Karava caste and the new rich, proposed in his manifesto a progressive programme to expand the railway network and improve facilities for industrial education. This is in contrast to the conventional proposals by his opponent Ponnambalam Ramanathan; tax reforms, increased salaries for headmen, and higher education facilities for the country. Even though Ramanathan, the choice of the Govigama elite and the old rich, won, Fernando's manifesto communicated the early roots of a shared desire for industrial development in Ceylon (Jayasekera 1970, p. 181-182 in Jayawardena 2007, p. 336). Marcus Fernando continued his campaign for industrialisation even after he was finally nominated to the Legislative Council in 1917 and re-nominated as an unofficial member to the reformed Legislative Council from 1920 to 1925 (Jayawardena 2007, p.337). Fernando, who closely followed contributions by Wimalasurendra on hydro electricity and sat as a member of the Industries Commission from 1916 to 1921, influenced the recommendations of the final report that was published in 1922 in favour of the Hydro Electric Scheme. With just four local members the Commission was over represented by British

[100] De Silva (1973) introduced the two categories "constitutionalists' and 'nationalists' to identify these trends discussed in this section: 'constitutionalists' who stood for a limited programme of political action which would leave undisturbed the structures introduced by the British; and 'nationalists' who went somewhat further and challenged the colonizer at cultural and religious fronts (p. 381). Constitutionalists who emphasized constitutional reforms as their main goal but avoided the building of mass movements to achieve the goal, tended to reconcile Ceylonese patriotism with loyalty to Britain (Ibid). While agitation by constitutionalists were confined mostly to action at the Legislative and the State Councils, agitations by nationalists even though they reached masses were also narrow in scope and not directed to confront head on the core trade interests of the colonial project and seek total independence. Instead the mobilization was for revival of Buddhism and Sinhala culture in the face of the threat posed by the religion and the culture of the colonizer.

[101] S. W. R. D. Bandaranaike, the third Prime Minister of Independent Ceylon and the pioneer of Sri Lankan Sinhala Buddhist politics, is not included in this discussion. He gave mixed signals on the subject of industrialisation as it was the case for many other issues (Manor 1989). While demanding “various other industries both agricultural and otherwise, must be proceeded with as fast as possible”, he refers also to the need of avoiding “wasteful and uneconomic industrialisation” (Bandaranaike 1963, p. 460). His approach towards mechanisation was hostile at times. Accordingly, “the whole idea underlying the employment of machine is to do work with greater speed and efficiency that any human being, however skilled, could do it, to eliminate as far as possible that margin of error and inefficiency that is inherent in human nature”, and “the vicious circle is indeed complete; the greater the production, the greater the unemployment, and the more unemployed they are, the less the buying power, and consequently the less the consumption, however cheap the good may be” (p. 563). The detailed proposal for the development of cottage industries presented by Bandaranaike during the early nineteen thirties was just an indication of the Gandhian phase of Bandaranaike’s early career, according to Manor (1989, p. 95).

officials[102]. The Hydro Electric Scheme provided the ground Fernando was looking for to situate his proposal for industrialisation and identify steps in more concrete terms. Recommendations of the Industries Commission reflected the degree of appeal of Wimalasurendra's presentation at the Engineering Association of Ceylon to the Ceylonese political elite. Fernando was said to have "read the paper with interest" (Wimalasurendra 1974[1930]). While appreciating the contribution made by Wimalasurendra for the scheme to "utilize the waters of Laxapana and Aberdeen catchment area for electrical power purposes", the report of the Industries Commission under the subheading "Factory Industries" concludes that "it cannot be too strongly urged that if Ceylon is ever to become more than an agricultural country, hydro-electric power is absolutely essential". By arguing against the cost of importing fuel and raw material needed that would hamper industrial development the report goes on to declare that "there is hardly a single manufacturing industry which, if developed on a large scale, under existing conditions, could ever give promise of reasonable success". The Commission, however, expected an entirely different scenario for the development of Island's industries, provided the hydro electric scheme materialised and cheap and efficient power was at hand. The Commission's prediction on the development of industries such as spinning, weaving and chemicals for agricultural industries was based entirely on the implementation of the Hydro Electric Scheme (Industries Commission 1922). The proposal for train services worked by electricity is also an indication of the influence of Wimalasurendra’s ideas presented in 1918 on the Commission.

The most influential campaigner in the early twentieth century who took the message of industrialisation beyond closed door forums to masses, however, was Anagarika Dharmapala, one of the leading figures of the Buddhist revival and the temperance movements. Dharmapala's call for industrialisation can be seen as the Ceylonese version of the Indian Swadeshi Movement which blossomed in Bengal in the latter part of the nineteenth century and the early part of twentieth century and spread across India from Punjab in the North to Tamil Nadu in the South (Gandhi 1997 in Menon 2012, p. 47). Many similarities can be drawn between Dharmapala's vision for industrialisation and the philosophy of the Swadeshi campaign that was defined by a range of activities such as the promotion of swadeshi sales, fostering and revival of Indian crafts, starting of new industries based on modern technologies, floating of swadeshi banks and insurance companies, organisation of technical education and industrial research and boycotting British products (Sarkar 1973, pp. 92, 96, 125).

[102] When the Commission was appointed in 1916 with R. E. Stubbs as the Chair four out of thirteen members were Ceylonese (K. Balasingham, Sir Ponnambalam Arunachalam, H. L. de Mel and H. Marcus Fernando). By the time the Commission concluded work in 1921 with Joseph Pearson as the Chair the same four remained in the Commission.

Dharmapala launched a massive attack against the dependency mentality of Sinhalese, using examples to show how far the islanders were dependent on foreign products for their day-today survival and suggesting that "they must learn to stand on [their own] legs and not dependent on alien" (Guruge 1991, p.511).

> "Rice, the staple food of the Sinhalese is imported from India, also our curry stuff. Pins, needles, ink, stationary, glassware, crockery, hardware, wearing apparel, shoes, hats, machinery, cutlery, cloths, umbrellas, bentwood, furniture etc., are all imported from abroad" (Guruge 1991, p.535).

During the early twentieth century Dharmapala proposed a broad programme for industrialisation even though his proposal was not properly formulated under the theme of industrialisation. He looked for the revival of the local industrial tradition that had collapsed as a result of the colonial economy, campaigned for a phase of industrialisation based on modern technology and asked for a network of industrial schools and colleges to be established to achieve the above task.

Dharmapala questioned the attitude of people who went for export replacements causing the local industry to collapse.

> "We purchase Pears soap, and eat coconut biscuits manufactured by Huntley and Palmer, and sit in chairs made in Austria, drink the purified liquid known as tinned milk, manufactured somewhere near the South Pole, while our own cows are dying for want of fodder, and grazing grounds and our own pottery we have given up for enamel goods manufactured in distant Austria, and our own brass lamps we have melted, and are paying to purchase Hinks lamps which require a supply of fragile chimneys manufactured in Belgium! Our own weavers are starving and we are purchasing cloth manufactured elsewhere!" (Guruge 1991, pp. 509-510).

Even though Dharmapala had issues with the failings of morality of the colonizer, he looked towards the West and other industrialised countries for lessons on industrialisation as was exactly the case with the Indian Swadeshi Movement. According to Bate (2012) "swadeshi leaders formed a number of institutions to raise funds to send workers, students and researchers around the world either on study tours or to receive education in universities in Japan, Germany and California (p. 43). In his 1912 message to young men of Ceylon Dharmapala encouraged them go out and bring back knowledge needed to develop the island[103].

> "I would be good for you and for the country, if a thousand Sinhalese youths leave Ceylon for the United States, Japan, Germany, India, Hongkong, France and England to learn technical sciences and scientific agriculture, irrigation, and return to Ceylon to begin the work of national elevation" (Guruge 1991, p.512).

[103] Dharmapala wrote this famous message "A Message to the Young Men of Ceylon" in 1912 as a pamphlet published in Calcutta (Jayawardena 2007, p.272).

His frustration about the state of affairs of the island in general was reflected also in his views on industrial education, which he treated as an integral and an important part of education in Ceylon.

> "In Ceylon there are no technological schools, no manufacturing firms, no engineering college, no industrial schools, no agricultural training college, no weaving schools where textile industries are taught[104].... The fees charged at the so-called Royal College, and other colleges are prohibitive indeed and the education the students get in these high schools is a sham. Nothing practical is taught in these schools and to get a higher technical education the Ceylon Government has to send Ceylonese youths to Poona, or Pusa or Madras"[105] (Guruge 1991, pp.532, 536).

A further indication of the spread of the discourse on industrialisation in the early twentieth century was the contribution made by Munidasa Cumaranatunga, the leader of the Sinhala language movement, Hela Haula movement. Addressing a meeting in 1927 at the Ananda College, the school attended by Wimalasurendra himself, Cumaratunga declared that the only way to strengthen the national economy of Ceylon was to develop hydro power. Protesting against the colonial government's reluctance to allow the Hydro Power Scheme to go ahead, Cumaratunga, questioned what the meaning of the lives of colonised people would be if they were not allowed to produce electricity on their own using their own water resources (Sooriarachchi 2016). Cumaratunga reiterated the importance of industrial development in a number of editorials of the newspaper *Lak Mini Pahana* of which he was the editor. He found fault with Ceylonese for not taking the initiative to establish industries to produce the basic necessities of day-to-day life. His editorials criticised Ceylonese for not producing their own food, own cloths, own instruments and own vehicles[106]. In his editorial written on 30th April 1935 on “Guru Puraya” Cumaratunga by highlighting the importance of producing for consumption, named the era as the era of production. By going against the early twentieth century sentiments against alcohol, he campaigned for a well established alcohol industry. He saw mass scale production of alcohol from the abundantly available coconut as a key industry that must be promoted. Through this, he suggested that the island could save foreign currency spent to import alcohol and in addition, earn more by exporting[107]. Cumaratunga maintained a consistent interest in the completion of the scheme to produce hydro electricity and expressed his frustration over the delay in commencement in his editorials. He also

[104] Writing to *Sinhala Bauddhaya* (Sinhala Buddhist) on the 9th October 1909 under the title "Education in Ceylon" Dharmapala expressed his frustration about the lack of opportunities for industrial education (Guruge 1991, p.512).
[105] This comment was made in an article written on "Waste Lands Ordinance" to *The Ceylon Nations* (Guruge 1991, pp. 532, 536).
[106] This critique was carried in editorials on "*Ape daasa baawaya*" (Our Status of Slavery - 24th July 1934), on "*Lankawe adyapanaya*" (Education of Lanka - 19th February 1935) and on "*Honda piliyama*" (The Good Solution - 23rd April 1935).
[107] See for example editorials titled "*Amadyapa Viyaparaya -1*" (Temperance Movement - 1, 12th March 1935), "*Amadyapa Viyaparaya - 2* " (Temperance Movement - 2, 26th March 1935), "*Ena Varshaye Aya Weya*" (Next Year's Budget, 6th August 1935) and "*Mantheevaranaya*" (Election).

continued to question the fate of islanders in a context where they were not permitted to produce their own hydro electricity[108]. Cumaratunga recorded his disappointment when funds were not allocated even in the 1935/36 budget to recommence work of the Hydro Electric Scheme[109] (Cumaratunga 2006). Even though it is not clear whether Dharmapala and Wimalasurendra were influenced by each other in imagining an industrialised Ceylon - the absence of cross references does not mean that they were not, the Hydro Electric Scheme did provide confidence to Fernando and Cumaranatunga. Wimalasurendra and the Hydro Electric Scheme provided the solid foundation needed to coordinate these dispersed pre-1918 thoughts on industrialisation. Rhetorical claims for industrialization would have meant little without resources on the ground such as the Hydro Electric Scheme, to translate lofty aspirations into material form.

The comprehensive industrial development plan proposed by Wimalasurendra at various stages during the first half of the twentieth century at forums attended by engineers, at the State Council and at public meetings attracted the attention of the political elite at the national and regional levels, print media and the general public. Hydro electricity that could be generated by the Aberdeen-Laxapana Hydro Electric Scheme[110] and the rest of the potential sites of the *Mahaweli* and *Kelani* rivers was the ground on which this development plan was constructed. The first intervention towards this was the presentation made to the Engineering Association of Ceylon in 1918. By formulating a comprehensive argument, the paper makes three proposals to improve the economics of power utilization: centralised power generation in bulk as against decentralised power generation by a number of small units; exploitation and development of extensive sources of water power available; and operating some sections of the Ceylonese railway system electrically, especially in the hill sections[111]. Based on records

[108] Editorial titled "*Ape Daasa Bawaya*" (Our Status of Slavery, 24th July 1934)
[109] Editorial titled "*Ena Varshaye Aya Weya* (Next year's Budget, 6th August 1935)
[110] The mismatch between the amount of power produced by the Scheme (75,000 horse power) and the demand for electricity in the island (only 40,000 horse power was predicted for the next ten years) was an unresolved debate from 1919 to 1922 (Industries Commission 1922). While those who favoured the Scheme invited conscious intervention to promote industrialisation using excess energy produced by hydro electricity, those who were not in favour expected business as usual and argued for a postponement till demand for electricity grew to match the supply by the Scheme, one day. The expected demand for electricity in Colombo after the introduction of hydro power was an ongoing debate even in 1929. The estimated demand of 8 million units in Colombo in 1929-30 was expected to increase to 23.5 million units by 1934-35 with the introduction of hydro electricity. It was said that "it is not much use trying to argue from the slow rate of growth of demand in Colombo in the past to the probable rate of demand in the future, in view of the fact that the firm which conducted the business before Government took it over did so with the sole object of maximizing profits and that in the pursuit of this policy stimulation of demand by reduction of price played no part" (In reference to the communication by Colonial Treasurer W. W. Woods to Colonial Secretary on 28th September 1929 in Ceylon Hydro Electric Scheme 1930).
[111] Section from Polgahawela to Bandarawela including the branch line from Kandy to Matale were the sections taken for discussion.

kept for several years by the Public Works Department, Department of Irrigation and the Survey Department and also based on actual measurements done by Wimalasurendra himself on the water flow of *Mahaweli* and *Kelani* river systems, he estimated a generation capacity of 200,000 horse power (150MW). His estimate of power that can be generated from Aberdeen - Laxapana system itself was around 60,000 horse powers (45MW) (Wimalasurendra 1918).

Even by 1930, the year in which Wimalasurendra retired after a long period at the PWD, his involvement with the Hydro Electric Scheme and his vision for an industrially developed nation was known and widely appreciated. Proposing a vote of thanks at the end of the public talk given by Wimalasurendra at the public meeting convened by the Galle Maha Jana Sabha in 1930, C. W. W. Kannangara, the prominent national leader who represented the Legislative Council and the State Council, said that "it was a great pleasure and a pride to see that the eminent engineer who hailed from Galle was trying to interest the people of his native town in an industrial renaissance". The Ceylon Daily News on 3rd December 1930 reported "loud applause" from the public when Kannangara continued to thank Wimalasurendra for devoting "his leisure to interest the people on the vast industrial possibilities of the Hydro Electric Scheme". Daily newspapers, *Ceylon Daily News* and *Morning Leader* played prominent roles in carrying his message of hydro electricity driven industrialisation to people (Jayasekara 1982). Wimalasurendra, himself, recognized the effectiveness of his campaign on the Hydro Electric Scheme and the industrial renaissance when he told the State Council that "the country now knows too much of the value of the Scheme to barter it away for a mess of pottage to big capital, and allow the people of this country to sink deeper and deeper into the mire of economic bondage" (Wimalasurendra 1933b, p. 1665).

As a member of the State Council and as a member of the Council's Executive Committee on Communications and Works, Wimalasurendra had a simple mission to which he was dedicated to the fullest; to push for the recommencement of the Hydro Electric Scheme that was halted and to broaden the imagination of an industrially developed Ceylon. He used every opportunity he received to express his opinion to campaign for his mission[112]. In his speeches he elaborated in detail the types of heavy industries Ceylon could develop, the need for an industrial development policy that could facilitate such a process, features of mechanisms that could be introduced to coordinate the implementation of the industrial policy proposed and the ways in which the technical labour force required for industrial

[112] During 1931 to 1936 there were many occasions Wimalasurendra argued in favour of different dimensions of industrialisation. For example, on the 12th February 1932 and under the debate on Customs Tariff, Wimalasurendra argued in favour of increasing duty on imported tea chests and imported liquid fuel (Wimalasurendra 1932a, pp. 527-536).

development could be nurtured though technology training and education. As a part of the campaign he moved private motions at the State Council demanding a national policy for industrial development (Wimalasurendra 1935a, p. 1462). He spent time to devise mechanisms to facilitate a process of industrialisation. Contradicting the view of the Minister of Labour, Industry and Commerce, P. Sundaram that the coordination of industrial development in Ceylon could be handled exclusively by the State Council Executive Committee on Labour, Industry and Commerce with the advice of the existing technical officers of the government when necessary, Wimalasurendra was of the opinion that the Executive Committee on Labour, Industry and Commerce alone was not capable of achieving this complicated task. Instead he proposed a special Industrial Research and Development Committee which required the cooperation of not just one but four Executive Committees of the Council: the Committee of Labour, Industry and Commerce; the Committee of Education; the Committee of Communications and Works; and the Committee on Agriculture and Lands (Wimalasurendra 1932d, p. 2234; 1933c, pp. 2233-2239). The development of the labour force needed to take forward the industrialisation drive was an important dimension with which his mind was preoccupied. Wimalasurendra commented regularly on technical education and proposed ways to improve the quality and the standard of technical education in the island to suit the process of industrialisation. The preference was for a workforce that could deal with practical problems. He considered Bachelor of Science in Engineering education as a pure academic or scientific qualification and preferred application oriented technical education to be given at technical colleges as the foundation of industrial development of Ceylon. He was in favour of engineers who were "suitable for employment in the various departments to meet the various engineering requirements of the country" than "training candidates to pass the B.Sc (Engineering) examination of the London University" who, according to him, still have to undergo practical training for three to five years as an apprentice. According to him, the "great difference between scientific and technical instruction is that the former deals with the principles in the abstract without reference to their application, whilst the latter amplifies and applies the principles to a particular purpose, trade or industry". Wimalasurendra highlighted four principles based on which the technical education of the island should be moulded, which he borrowed from the recommendations of the Royal Commission on Technical Education 1881. These four principles highlighted his bias towards application oriented education: specialised technical education should include the teaching and application of principles of science or art connected with a trade or industry and the practical application of those principles; the object of the practical work or workshop instruction was to illustrate the practical application of the underlying theoretical principles to a trade or industry; those attending special technical classes should

be engaged in the occupation for which the classes were formed; technical teachers must have a wide practical experience and a sound knowledge of the scientific or the artistic principles underlying the trade or the industry (Wimalasurendra 1933a, pp. 1115-1118; 1935c, pp. 3218-19).

Wimalasurendra did not accept rural construction, the adoption of measures for increasing production from agriculture and from cottage and home industries in rural areas by co-operative effort of people, as the best way forward for colonies in the region. Rural construction, which was also known as rural development, rural regeneration, rural reconstruction, rural upliftment, etc., was a vision influenced by Gandhian thought and was influential in the island during 1930s and 1940s[113] (Seneviratne 1999, p. 56). In this sense Wimalasurendra deviated from the Gandhian thought by which the nationalist movements in the region were influenced at that time. Rural construction with a focus on agriculture and cottage industries was seen by him as a misunderstanding of the magnitude of task ahead of the colonies that were getting ready for independence from colonizers. With the expansion of the transport infrastructure and the plantation economy, the idea of a rural Ceylon was rapidly changing with urban population increasing more rapidly than the rural, argued Wimalasurendra (1935b, p. 2451).

The Hydro Electric Scheme provided the material ground for Wimalasurendra to come up with a comprehensive industrial development plan. At the 1930 meeting at the Galle Mahajana Sabha Wimalasurendra drew a brief sketch which included weaving, operating electricity driven trains and the manufacture of fertiliser, dyes, explosives, matches, soap, caustic potash, caustic soda, motor car tyres, coconut oil, etc. He, however, improved and nuanced this vision in the following years. Speeches made by Wimalasurendra at the State Council from 1931 to 1935 taken together provide a detailed account of these industries that could be developed in industrial Ceylon (See for example, Wimalasurendra 1932a; 1932c; 1932e; 1933a; 1933b; 1933c; 1933d; 1934c; 1935b). Some of these industries and industrial measures he identified as way back in 1930s have not been developed even now or were developed during the second half of the twentieth century, especially during the 1970s – many decades after other countries in the region had achieved industrialized status. Coconut palm and rubber plantations spread across many parts of the country and Wimalasurendra saw these as sources of raw material for many industries. Margarine, soap and lubricating oils were the products he envisioned being produced from

[113] Conducting a discussion on the key role played by the monks from the Vidyodaya *pirivena*, one of the two seats of monastic learning in the city of Colombo, in promoting rural construction, Seneviratne (1999) describes how the concept evolved within the Ceylonese context. According to him Anagarika Dharmapala's economic programme was centred on the concept of rural regeneration. However, it was Wilmot A. Perera, the philanthropist, who was influenced by western socialist ideas as well as Indian ideas such as Gandhi's on rural society and Tagore's on education, who first converted the theory of rural development into practice (Seneviratne 1999, pp. 56-65).

coconut palm while rubber could be used to manufacture tyres, floor covering and road surfacing on a mass scale. Railway sleepers, poles for telegraph and electric lines, heavy wooden structures such as jetties and bridge works and tea chests that were made so far out of imported wood were to be manufactured locally with wood varieties available in abundance. Wimalasurendra provided a detailed account of wood varieties suitable to produce different kinds of wood products with estimates of acreages for plantations[114]. Charcoal that drives suction engines was suggested to operate sawmills, tractors and other requisite machinery. Tar and acetic acid too were listed as by-products in the process of formation of charcoal. The large clay beds distributed all over the Sabaragamuwa district with "finest clay... that is of such superior quality that even China has imported quantities of it to be mixed with the clay of that country" was said to provide raw material for a Ceylonese porcelain industry that could replace cups, plates, electrical insulators and various other articles imported from England. Sand and lime deposits spread in various parts of the country could be used to manufacture glass. Plumbago, deposits which were available in large quantities and were exported to England as raw material, Wimalasurendra suggested could be used as dust in foundries and to drive industries such as manufacturing of pencils, making electrodes for the use in electro-metallurgical works, making brushes used in electrical machinery, making crucibles and preparation of paints and lubricants. Commenting on the importing of table salt Wimalasurendra expressed his disappointment, saying that he "fail[s] to understand why the salt available in such immense quantities cannot be refined and put into shape" to satisfy the needs of the local market. He canvassed for the industries of caustic soda, potash that could be used to manufacture soap, which could be produced by electrolysis from soap. The same process, he suggested, could be used to produce bleaching powder. Cotton was another industry Wimalasurendra promoted. The production of textiles and perfumes were also in Wimalasurendra's list of industries that could be established.

[114] Availability of suitable varieties of timber in Ceylon to produce tea chests was a long drawn debate between the Minister of Labour, Industry and Commerce, P. Sundaram, and Wimalasurendra. With the intention of discouraging imports Wimalasurendra proposed to increase the duty on tea chests to fifteen percent (Wimalasurendra 1932a, p. 527). He argued that necessary timber to produce tea chests locally was available in all parts of the country - namely *Hora*, *Keena*, *Lunumidella*, *Dambu*, etc. - and to last them for several years and the use of proper machinery and proper guidance were all that was required. The Minister, however, thought otherwise and was of the opinion that satisfactory tea chests couldn't be made from the timber available at that time. At the debate on "Industrial Research and Development" on the 26th August 1935 Wimalasurendra reaffirmed his case for locally produced tea chests. He suggested *Hora* (and other varieties of soft timber) as ideal material for tea chests which was available in abundance, especially in areas like Mirigama, Kottawa, Muwagamakanda, and amounting to a total of 18,560 acres. He suggested that the latest technology be used to produce thin slabs of *Hora* "reinforced by the various light metals now available in the world" could be used to manufacture a suitable and inexpensive form of tea chest.

Irrigation and agriculture were not missing in Wimalasurendra's plan. The issue of not getting rain at the right time he suggested could be addressed through artificial irrigation using water pumps driven by hydro electrical energy. He saw no future for agricultural products unless agriculture was modernised using latest developments of science and technology. He predicted that with the implementation of the Hydro Electric Scheme, "every individual working on farm to get water, more water and water at the proper time". The manufacture of artificial fertilizer and agricultural machinery were two other agriculture related industries promoted by Wimalasurendra. Paddy industry that gave small returns was proposed to be highly mechanised and a large area be brought under cultivation if paddy as an industry was to work on a paying basis.

An interesting contrast of the developmental nation imagined by Wimalasurendra to ethno nationalism one witnessed in the early twentieth century that moved Sinhalese and Tamils away from each other, was the incorporation of Jaffna, the Northern capital of the minority Tamil community, in his industrialisation plan for Ceylon. Addressing the Council he declared that "the transmission of the necessary electrical energy ..... to Jaffna to operate the machinery, kilns, and so on, for making cement is within practical possibilities". "Brick and tile, pottery, paper, tanning and leather work, fruit and fish canning, brass work, essential oils, candles and matches are some of the other industries awaiting local development", according to Wimalasurendra. With the provision of tools and plants to skilled artisans spread in areas like "Vannarponnai and Point Pedro in Jaffna or in the South towards Matara and Dondra, or in a place like Negambo", he was of the opinion that the craft industries could be brought to a highly advanced level. "All hinges, bolts, locks and brass-fittings come from Birmingham now ... can very well be produced here", was his view (Wimalasurendra 1932d, p. 2228-32; 1935b, p. 2456).

Infrastructure development was a necessary condition for industrialization envisaged by Wimalasurendra. While electrification of railways was proposed for the main railway lines, rail buses or diesel electric cars were proposed to be introduced for urban railway traffic to run in parallel with road buses. He estimated a cost of less than one cent per unit for railway traction if the trains in the main lines were run by electricity generated from the Hydro Electric Scheme and for diesel electric cars to work at nearly half the cost of steam locomotives (Wimalasurendra 1933b, pp. 1661-62). Electrification of railways would mean, according to Wimalasurendra, electrification of towns along the railway lines giving life to a new wave of small and medium scale town-based industries. He even visualised in his industrialization plan the sale of additional electricity generated by the Hydro Electric Scheme to Southern India.

The first half of the twentieth century offered two possible futures for the island, one represented by the Aberdeen-Laxapana Hydro Electric Scheme and the other by the Minneriya Irrigation Scheme, one aiming modern industrial development with a forward gaze and the other aiming the growth of agriculture through the colonization of abandoned land in the dry zone, with a backward gaze of recreating the past glory of the agriculturally advanced ancient civilisations, one by Wimalasurendra and the other by D. S. Senanayake, the Minister of Agriculture and Lands of the State Council and later the first Prime Minister of independent Ceylon.

2.4.3 Competing choices: Minneriya Irrigation Scheme

Senanayake's vision for agricultural development who saw Ceylon "an essentially agricultural country" is detailed in *Agriculture and Patriotism*, the book he published in 1935 (Senanayake 1999[1935]). He summarised his logic when he says that "it is as right for the National Government to make the streams and rivers of the arid regions useful by engineering works for water storage ... The Government should construct and maintain the reservoirs as it does other public works... The object of the Government is to dispose of the land to settlers who will build houses upon it. To accomplish this object water must be within their reach... Our people as a whole will profit, for successful homemaking is but another move for the up building of a nation" (pp. 36-37). Senanayake's strategy consisted of two steps; first to highlight the importance of peasantry in the affairs of the island along with references to the past glory of the agriculturally advanced Sinhala kingdoms and then to nominate himself as the agent of peasant interests. This custodial and paternalistic attitude towards peasantry on the part of the Ceylonese elite to become champions of peasants' cause was a theme that had attracted the attention of a number of scholars. According to Moore (1985) communication in the early twentieth century conveyed the impression of a sense of obligation on the part of the elite to use state power on behalf of peasantry (p. 3). Peasants being converted into landless proletariat and being attracted into plantations was considered unacceptable. As per Samaraweera (1981), "it was in the cultivation of the soil that the people of Ceylon genius at one time achieved its greatest triumphs" (p. 135). Peasantry was considered the 'backbone' of the country and agriculture the truly 'patriotic endeavour'. (p. 136). The Land Commission of 1927 of which D. S. Senanayake was a member, recommended the Crown Land "should be 'mapped out' so that the diverse needs of the society and government could be accurately dealt with, the needs of the peasantry of course being given first priority" (p. 145) Settlement of pioneer colonists in the Minneriya Scheme, first ever large scale colonization project implemented in the twentieth century that fell in line with the vision of Senanayake, was initiated in 1932 as a project commissioned

by the colonial government (Somasunderam 1961). The discourse of developmental nationalism constructed by Wimalasurendra contained a strong critique of this backward gaze.

Wimalasurendra saw this approach, from "every distinguish[ed] British statesman, be he the Under Secretary of State for the Colonies" to "a Minister passing through", to "remind us of the glories of our past in agriculture and irrigation" and to trap the imagination of the colony's population in the past than in the future as a strategy to confine Ceylon as a non-industrialised agricultural nation whose main occupation is to grow raw products "to be shipped by foreign agents in foreign ships, to be worked into manufactured articles by foreign countries with foreign capital, to be re-exported to this country by foreign merchants to their corresponding foreign agents in Ceylon to be redistributed to us" (Wimalasurendra 1932d, p.2232). Attempts by the Ceylonese political elite to chase this dream of ancient glory in agriculture and irrigation "reminded" to the Ceylonese by the British rarely missed comment by Wimalasurendra. He was of the opinion that "ignoring all that science and design can do for us, agriculture conducted on traditional and casual methods practised hundreds of years ago will not help to produce necessary results". "It is quite evident that it is utterly impossible to compete with cheap rice imported from India", commented Wimalasurendra, "unless we improve our methods of cultivation, introduce more fertilizers to give better returns, and also provide cheap transport and cheap power to operate machinery". Rather than relying on reconstructing the past glory Wimalasurendra looked for science and technology to construct the future glory of industrialised Ceylon. By referring to the "tank storage system organized and brought into existence by our Sinhalese Kings" but not in operation any more, he expressed confidence in science and technology to restore them fairly easily and even outstrip them by constructing even larger tanks.

> "So, Sir, ignoring all that science and design can do for us, agriculture conducted on traditional and casual methods practiced hundreds of years ago will not help to produce the necessary results.
>
> With a huge outlay, Sir, the tank storage system organized and brought into existence by our Sinhalese Kings can be restored and we can no doubt restore the Sea of Parakrama Bahu. We can no doubt outstrip him in what he has done, and we might even produce a "Sea of Senanayake"[115]. But we have to consider whether after all the capital and energy thus spent it will be possible to restore or re-establish the production that was obtained during the time of Parakrama Bahu with more or less forced labour (A Member: No!) I heard someone say, no. Well, I say if not with forced labour, with the large population that existed in those times. What I

[115] The sarcastic reference here was to D. S. Senanayake, the Minister of Agriculture and Lands.

> maintain is this, that the very agencies that wiped out that enormous population will nullify our efforts again."
>
> (Debate on "The Appropriation Ordinance" (Wimalasurendra 1935b, p. 2452))

The rationale of constructing tank based irrigation schemes in the less populated dry zone in the North-Central parts of the island by transporting and colonizing thousands of people from the other parts of the country while there were more suitable irrigable lands available in the Southern Ceylon was seen by Wimalasurendra merely as attempts by Ceylonese political elite to achieve the glory of outdoing ancient kings.

> "And, Sir, what is the remedy? To colonize an area by getting a large force of labourers to live in a place like Minneria, to begin with, we have to eradicate malaria. Until that is done, it is perfectly useless trying to colonise that part of the country. While other areas which are already irrigable exist in large acreages, I fail to understand why we should sink so much capital and so many human lives in this particular zone. Except for the glory of outdoing Parakrama Bahu, I do not see much sense in it."
>
> (Debate on "The Appropriation Ordinance" (Wimalasurendra 1935b, p. 2452))

He was of the opinion that the reasons that caused collapse of the ancient irrigation civilizations in the island, namely the intensive cultivation methods used that degraded fertility of soil and dropped production and the malaria epidemic, should be scientifically studied to identify solutions before completing irrigation schemes equivalent to the scale of Minneria Scheme devised by the Minister Senanayake (Wimalasurendra 1935b, pp. 2452-53).

Wimalasurendra developed his argument for a Ceylonese developmental nation based heavily on the contributions of an Indian, Mokshagundam Visvesvaraya, the eminent civil engineer and the state planer who lived at least half a generation ahead of Nehru (Vyasulu 1989). He used to refer to Visvesvaraya[116] in his speeches at the State Council and used to quote sections from his publications. By quoting Visvesvaraya at the debate on "The Appropriation Ordinance" in 1935, Wimalasurendra advocated for three emergency schemes: rapid industrialization by multiplying factories and industrial establishments; establishment of practical training institutes to improve technical literacy among the working population; along with rural construction to increase production from agriculture and cottage and home industries (Wimalasurendra 1935b, p. 2454). Wimalasurendra's entire range of proposals for

[116] Visvesvaraya was referred to as "Visweswara Aiyar" in speeches given by Wimalasurendra. Interestingly, another case of misspelling of Visvesvaraya's name was observed by Zachariah (2005) when he refers to a letter written by Walchand Hirachand whose reputation as a defender of the rights of Indian shipping had won him his national credentials. For Hirachand, it was "Vishveshva Aiya" (Note 242, p. 287).

industrialisation made during his career can be positioned within these three emergency schemes mentioned above.

2.4.4 Visvesvaraya and Wimalasurendra

Writing particularly on "Nehru and the Visvesvaraya legacy" Vyasulu (1989) investigates the extent to which Nehruvian developmental nationalism was influenced by the thoughts of Visvesvaraya and concludes that the contributions by him were well known to Nehru (pp. 1700-1704). According to Vyasulu, Visvesvaraya "was a man whose accomplishments at the level of a princely state [of Mysore] which was under indirect British rule may be seen as parallel with those of Nehru on the larger canvas of the nation, fifty years later".

While observing the strong influence of Visvesvaraya's vision on Wimalasurendra's imagination of the Ceylonese developmental nation, one can also note remarkable similarities between the two engineers, who played pioneering roles in sketching the initial drawings of the developmental nations of the two colonies, with one realising his dream and the other not. Both specialised initially in civil engineering. Both had major engineering contributions to their credit. Visvesvaraya designed drinking and sanitary systems of many major cities, made contributions to systems of flood control in Orissa and to the generation of electricity in Mysore and elsewhere, associated with the Tata Iron and Steel Company in Jamshedpur and was the founder of the Vesvesvaraya Iron and Steel Company in Bhadravathi and played an important role in the economic development of Mysore initially as an engineer and later as the Diwan (Vyasulu 1989; Rao 2002). Wimalasurendra too was credited for his contributions in several engineering projects in addition to his involvement in the Hydro Electric Scheme. Wimalasurendra’s design for the spiral railway track in Demodara in the central hills of Sri Lanka which reduced the distance of the original design of the extended railway track from Bandarawela to Badula by three and a half miles, is considered a marvel of civil engineering in Sri Lankan railway engineering. The Hiyare Water Supply Scheme and the Kolonnawa power station are two other major projects designed by Wimalasurendra. Repositioning of the twenty four foot tall pinnacle at the top of the three hundred and thirty eight feet tall Ruwanweli Pagoda is also an achievement credited to Wimalasurendra (Rathnapala 2009). Both Visvesvaraya and Wimalasurendra were involved with governance - Visvesvaraya as the Diwan of Mysore from 1912 to 1918 and Wimalasurendra as a member of the State Council from 1931 to 1936. The promotion of traditional industries and state investment in industry were two areas that interested both. As with the case of Wimalasurendra whose views led to controversy, there was considerable controversy around Visvesvaraya's views, notes Vyasulu. References are found to

arguments and clashes between him and the Director of Industries and later with an official whom temporarily succeeded him as Diwan. 'Clear-cut precision' in their views is another characteristic shared by the both (see Vyasulu (1989) for Visvesvaraya's side of the story).

2.4.5 Why did not Ceylon become a developmental state?

The important question that begs an explanation is why this imagination in an industrially advanced Ceylon that was confidently backed by the Aberdeen-Laxapana Hydro Electric Scheme failed to evolve into to a mass movement of developmental nationalism leading to the Sri Lankan developmental state? Why did it not succeed in Ceylon while it did in India? Why did not the quick implementation of the Scheme become the main slogan of a mass developmental nationalist struggle? Why did not nationalism in the island evolve in a direction with a common vision for the future that could have united the Sinhala and Tamil communities against the broad colonial interests as exemplified by Wimalasurendra, but rather evolved in a different direction by looking at past technological glory of the majority Sinhala community and treating the Tamil as a lesser minority? Why are Wimalasurendra as an individual and the Aberdeen-Laxapana Hydro Electric Scheme as a national project missing in standard history books or in debates on Sinhala nationalism? Why is it that Senanayakes, Bandaranaikes, Dharmapalas and Cumaratungas appear prominently in the history of the first half of the twentieth century Ceylon and why not the Wimalasurendras? All these are important questions that can be derived out of the discussion conducted so far, but the requirement to treat the Hydro Electric Scheme as a single case study among others limits the space available for me to deal with them in detail, within the context of this study. While indicating that the Aberdeen-Laxapana Hydro Electric Scheme is an important text that needs to be used in the study of nationalism in Sri Lanka and demands further scholarly treatment, I would like to have a brief discussion to unearth some possible ways of answering the questions raised above.

2.4.5.1 Personality theory

Wimalasurendra's defeat at the State Council election in 1936 provides an entry in to this discussion. The reason for the defeat, according to Weeramanthry[117], a relation of Wimalasurendra, is the fact that he "had no power base in the political sense" even though he was "an outstanding engineer" (Weeramanthry 2010 in Arumugam 2012). This, however, is not an adequate explanation to describe

[117] Judge C. G. Weeramanthry is a respected Judge in the island who is also a former Judge of the International Court of Justice, Hague.

why Wimalasurendra won the election for Ratnapura in 1931 by 889 votes[118] in the first place and then lost in 1936 by a huge margin, by 7999 votes[119], immediately following his term at the State Council which can be seen as with a time of historical significance from the point of view of formulating a discourse on an industrial renaissance in the island. Debates at the State Council during 1931 to 1936 and a few sources, a few biographies of Wimalasurendra and a few texts on casteism in Sri Lankan politics, guide us towards two important factors to understand his defeat. Wimalasurendra was more an engineer than a politician who seemed not to have followed the basics of political survival. He made enemies at personal level as a result of his straightforward approach to issues. He did not subscribe to personal favouritism in offering jobs or contracts. Only the capable received special treatment and this quality had disappointed some from his own caste community (Jayasekara 1982). This approach of straightforwardness that had presumably won favour with the Ceylonese political elite during his time as an engineer seems to have worked against him when he entered the territory of politics - the same space occupied by the political elite of the country. Wimalasurendra's contributions at the State Council didn't follow, as it can be observed from his contributions, the rule in politics of forming strategically useful alliances with those who support one's political interests, and defending them in return irrespective of the merit of the case under discussion. Wimalasurendra's responses at the State Council to proposals brought forward by D. S. Senanayake, who played a prominent role in defending the Ceylonese interests in the Hydro Electric Scheme during the 1920s, is an example of this. Voting for estimates forwarded in 1932 by the Executive Committee of Agriculture and Lands and presented to the Council by the Minister, D. S. Senanayake, to strengthen the flood protection bund of Colombo drew lengthy submissions by Wimalasurendra questioning the technical feasibility of such a scheme (Wimalasurendra 1932b, pp. 1073-1098; 1932d, pp. 1299-1319). D. S. Senanayake's frustration was expressed when he told the Council that "the scheme that has been put forwarded by the Engineers would not satisfy my friend the member for Ratnapura" and "he, as a very competent Engineer, thinks there is some other scheme very much better than the scheme put forwarded by our Engineers and he wants me to guess what that scheme is" (Senanayake 1932, pp. 1311-1312). Wimalasurendra spoke again in 1935 against the proposal by the Minister of Agriculture and Lands to establish a special hydraulic laboratory. Training in fundamentals of hydraulic engineering should be given at the Technical College, argued Wimalasurendra, and the training that was required at the Irrigation Department, according to him, was the training to apply such knowledge in fundamentals to solve practical problems.

[118] Wimalasurendra received 7406 votes against his main rival George R. de Silva who obtained 6517 votes (Jiggins 1979; Ivan 1999a; Ivan 1999b).

[119] Jayaweera Kuruppu who received 16,864 votes defeated Wimalasurendra who had got 8865 votes (Ivan 1999a; Ivan 1999b).

D. S. Senanayake seemed offended when Wimalasurendra commented on the lack of experience of the Director of Irrigation, an official who worked under him. His lack of respect towards Wimalasurendra was clear when he said that "there is not an engineer in this world, according to [Wimalasurendra's] own opinion, who knows engineering, but himself" (Senanayake 1935, pp. 3469-3473). As discussed above, Wimalasurendra's negative opinion about the Minneriya Irrigation Scheme - the major colonization scheme implemented by Senanayake as one of his pet projects, can be considered the hardest attack against Senanayake. These personal traits of Wimalasurendra might have frustrated a few individuals from his caste who looked for undeserved favours, but it can be reasonable to assume that he remained the symbol of the pride of the Navandanna Caste in the highly caste-conscious society of the early twentieth society. This characteristic of Wimalasurendra may also have irritated some of the Ceylonese political elites as it was the case with Senanayake and perhaps damaged to a certain extent the respect he had earned as a reputed engineer before entering the terrain of politics.

2.4.5.2 Caste theory

Wimalasurendra's defeat in 1936 with a large margin and the failure of his imagination of an industrialised Ceylon to become the foundation of a nationalist movement still demands a better explanation. Wimalasurendra's defeat at the 1936 elections is treated as one of the examples of casteism at play in Sri Lankan elections by a few authors wrote on the subject. Janice Jiggins (1979) identifies Jayaweera Kuruppu who defeated Wimalasurendra in 1936, as a descendent of high Govigama caste, a close associate of S. W. R. D. Bandaranaike, the emerging leader of the old rich aristocracy, and a founder member of Bandaranaike's Sinhala Maha Saba. Jayaweera Kuruppu was one of the few MPs who left D. S. Senanayake's government in 1951 along with S. W. R. D. Bandaranaike and later became the Minister of Local Government and Cultural Affairs when Bandaranaike formed the government in 1956. Victor Ivan takes Wimalasurendra's defeat in 1936 as a leading example of caste politics in Ceylon where Jayaweera Kuruppu used casteism in the election at Ratnapura "by rousing the Goigama people" against Wimalasurendra who was linked with the low-status Navandanna caste (Ivan 1999a; 1999b). According to Jiggins there was a significant presence of Navandanna caste community in the Ratnapura electorate. Rathnapala (2009) writing a biography of Wimalasurendra says that even *kavi - kolas* (scurrilous pamphlets) were distributed against Wimalasurendra. Distribution of such pamphlets during 1920s right up to 1950s election campaigns that were conducted in a vituperative and defamatory manner was a common feature (Jiggins 1979). As Rogers (1994) points out, in general caste had little place in the official colonial discourse since 1830s, but remained an important force in local politics (p.

18). According to Rogers, caste ceased to be an important national issue with the widening of franchise since the 1920s, but did remain a factor in the individual constituencies, where it reflected longstanding rivalries that, however, never showed any sign of coalescing and becoming a significant political factor (p. 18). Did Bandaranaike give his blessings to Jayaweera Kuruppu to use casteism against Wimalasurendra or did he take a neutral stand on the issue? As per Manor (1989) "Bandaranaike has shown himself to be free of caste prejudice which was enough to mark him out as a more progressive figure than most other prominent politicians" (p. 90). What made him take a stand against the Hydro Electric Scheme then? In a booklet titled "The Spinning Wheel and the Paddy Field" which was published in 1933, Bandaranaike refers rather sarcastically to "those who cling foolishly to the belief that cheap power is going to be the salvation of the world". For Bandaranaike "the hydro-electric scheme, for instance, is hailed as the only hope for Ceylon. This is, after all, nothing more than the apotheosis of rationalisation" (Bandaranaike 1963, p. 583).

It is within this context that the impact of caste in the success or rather the failure of the Hydro Electric Scheme and the campaign by Wimalasurendra for an industrialized Ceylon needs to be assessed. The Navandanna caste which is numerically small and also occupied a relatively lower position in the pre-colonial social ladder doesn't appear in the Sri Lankan discourse on the twentieth century caste and class rifts, except on a few occasions[120]. Navandanna did not belong to the group of castes that represented the Ceylonese new bourgeoisie and hence lacked the social power exercised by the Karava, Salagama and Durava castes along with the Govigama caste. Although not a prominent participant of the major caste rivalries of the time there is no reason to think that members of Navandanna caste escaped the inferior treatment lower castes received from the higher castes, except for fact that this treatment was more privately expressed. So caste became more hidden from view and spoken about less publicly even though it remained an important aspect of social consciousness and could be mobilised in public at times of necessity such as in the State Council elections in 1936 where Wimalasurendra was defeated comprehensively. Did caste play a bigger role in the life of Wimalasurendra in addition to his defeat at the 1936 elections? Was Wimalasurendra's caste a factor that worked against his campaign for an industrialised Ceylon? The State Council debates in which Wimalasurendra participated are not associated with caste politics. Most of the biographies of Wimalasurendra also avoid any reference to

[120] In a caste analysis on "the principle Sinhalese plantation proprietorship in 1927", Roberts (2007) refers out of a list of 161 to Sir T. E. Sampayo as the only plantation owner from the Navandanna caste (p.315). The same source also refers to four pamphlets written in 1909 and 1910 by Dr. A. Emmanuel Ratnaweera Roberts representing the Navadanna viewpoint. A. E. Roberts was introduced as one of the few medical men in his time who attempted to combine ayurveda with Western medicine (p. 340). This was in addition to the reference to Wimalasurendra in relation to the 1936 State Council election for Ratnapura, as mentioned above.

his association with the Navandanna caste. Weeramanthry, the prominent relative of Wimalasurendra, leaves aside caste when he describes the election defeat in 1936. This absence of any reference to caste obviously doesn't mean that the low caste status of Wimalasurendra did not work against his political project. The possibility that it also worked against the mobilisation of the Ceylonese political elite from moving towards an industrialised Ceylon cannot be completely disregarded.

2.4.5.3 Class theory

Why this imagination of an industrially developed Ceylon grounded firmly on the Aberdeen Laxapana Hydro Electric Scheme failed to become a nationalist movement with a vision towards the future, I believe, still demands a more plausible explanation. Caste most probably played a negative role in alliance formation at the State Council in battles led by Wimalasurendra to move the island towards industrialisation; caste played a role in preventing Wimalasurendra's election to the State Council for a second term and hence prevented his presence from further struggles at the State Council and the Parliament levels; but why did not the emerging bourgeoisie, the new rich, who while representing different castes also shared common class interests, respond favourably to the call for an industrially developed Ceylon? Why did not the individual support extended by the bourgeois political leadership at different times to push for the commissioning of the Hydro Electric Scheme, turn into a collective effort and transform it into a nationalist movement to establish an industrially developed independent Ceylon?

How the elites of the early twentieth century, the new rich and the emerging bourgeoisie, reacted as a group to these trends carrying different futures for Ceylon, may have decided the ultimate success of each trend. Why the campaign for industrialisation of Ceylon initiated by Southern elites like Marcus Fernando, Anagarika Dharmapala and Munidasa Cumaratunga and developed as a viable future for Ceylon by Wimalasurendra, failed to attract the powerful new rich can be best explained in terms of class rather than in terms of caste. According to Jayawardena (2007) the Ceylonese new rich, the bourgeoisie, was an annex of imperialism, a dependent class, whose "creation and continued existence was based on the protection and opportunities provided by the colonial state" (p. xx). They represented rentier and merchant rather than industrial capital and were earning their wealth initially through renting of paddy, arrack, fish, ferry, gaming etc. and then through business avenues opened as a result of the colonial economy. This lack of industrial capital therefore did not provide the Ceylonese new rich the independence needed to challenge the colonial regime up front and form an anti-colonial developmental nationalist movement seeking independence. The revival of indigenous religions, the

expansion of Buddhist, Hindu and Islam education, the promotion of temperance and the agitation for moderate political reform was the extent to which the Ceylonese merchant and rentier capitalists were willing to go (Jayawardena 2007, pp. xx, xxii, xxxii, xxxi, 264). The campaign by Wimalasurendra for an industrialised developed Ceylon that conflicted with colonial industrial interests, therefore, was of little interest to the Ceylonese bourgeoisie, who collaborated with the colonial government on the economic front.

Chapter 3

A High-Tech Journey to the Sinhala Past: the Accelerated Mahaweli Development Project (AMDP) (1978-1985)

The Accelerated Mahaweli Development Project (AMDP), is the single largest engineering project ever implemented in Sri Lanka, a classic case study of how technical (i.e. the technical structure of the Project) and non-technical (i.e. individual, group and ethnic politics) aspects of a technological system are blended with each other. By treating technology as a text (and also as a drama[121]), this chapter looks at how different segments of Sri Lankan society make sense of the AMDP and how some of these narratives used to generate meaning, apply a common strategy to mobilise the imagination of Sinhalese to be nostalgic about a glorious past. I have selected two cases to facilitate the discussion further, "Yaan Oya - Malwathu Oya - Maduru Oya Operation" and "North Central Province Canal", the two attempts made to alter the original map of the Project, using them to demonstrate how ethno-nationalist tensions during the 1980s and beyond are linked with the technical design of the AMDP. The AMDP, therefore, is not just a technological object or a site that facilitated mobilizing the imagination of the Sinhala nation on a journey towards the past, it also acted as an instrument to engage with the 'other', Tamils, through exclusion, violation and attack.

3.1 Background

The Accelerated Mahaweli Development Project (AMDP) was the main achievement of J. R. Jayawardene's United National Party (UNP) – a regime that came to power with a landslide victory at the general elections in 1977, and subsequently ruling the island for twelve continuous years. It aimed to optimize use of the water of the longest river in the island, the Mahaweli. "I am going to stake the entire future of the UNP on the successful completion of the Mahaweli Scheme" declared Jayawardene immediately after announcing the project (Peebles 1990, p.43).

[121] Pfaffenberger (1992) called a technology a drama by taking into consideration the antagonistic power politics involved in the process of design, development and use.

3.1.1 Project details

The river Mahaweli is 337 kilometers long and flowed undisturbed and largely unutilised from the mountains of the central hill country till it reached the ocean in the northeastern coastal town of Trincomalee. The AMDP, a project of advanced hydraulic and irrigation engineering, diverted water away from Mahaweli by channeling Mahaweli water through other rivers and tributaries to existing major tanks located in the water scarce dry zone of the country, by constructing a complex web of major reservoirs and trans-basin canals. The tributaries and the tanks fed by Mahaweli water are used to provide water to new settlements established in less populated lands of the dry zone and to supply water to existing settlements that lacked adequate water for cultivation (Cooke 1982). The project area covers about 39% of the whole island or 55% of the dry zone (Planning and Monitoring Unit, Mahaweli Authority of Sri Lanka 2006). Under the AMDP, four major multipurpose reservoirs, Victoria, Kotmale, Randenigala and Maduru Oya, were constructed, between 1979 and 1985/86. The Randenigala Reservoir complex consists of two reservoirs, the main Randenigala reservoir and the Rantambe reservoir just three kilometers downstream, taking the number of reservoirs coming under the AMDP to five[122]. The dams of all five reservoirs belong to the category of "big dams" of the world, designed to bear the pressure exerted by millions of cubic meters of water. While the tallest dam of the Victoria reservoir was of concrete arch type, the dams of Kotmale, Randenigala and Maduru Oya were built using rockfill technology. The Rantambe dam is gravity concrete type (Cooke 1982). Apart from providing irrigation water, the generation of electricity is the second main purpose of the AMDP. Power stations attached to Victoria, Kotmale, Randenigala and Rantambe injected a drastic boost to the capacity of electricity generation by adding 523MWs to the national electricity grid so far[123] (Gunasekara 2011). Thousands of families were settled in the new settlements declared open under the AMDP which were named "systems", differentiated from each other by single English letters. Systems C, B, D and G fall exclusively under the AMDP (Cooke 1982). The management of Udawalawe and System L were also handed over to the Mahaweli Authority in 1982 and 1987 respectively (Planning and Monitoring Unit, Mahaweli Authority of Sri Lanka 2006). The area cultivated under the AMDP includes 156,000 acres of existing land and 406,500 acres of new land, amounting to a total of 563,400 acres (Fernando 2000).

[122] Mahaweli Ganga, a publication by the Ministry of Land, Irrigation and Mahaweli Development, identifies the five major reservoirs described above, along with Ulhitiya and Ratkinda single purpose reservoirs, Minipe Anicut and the trans-basin canal and the Mahaweli Raja Mawatha, the highway connecting Kandy and Badulla as the main components of the AMDP (Ministry of Land, Irrigation and Mahaweli Development 1992, p. 30).

[123] According to the original plans of the AMDP, the second stage of Victoria power generation is expected to add a further capacity of 210MWs in addition to the 7.5MWs expected from Maduru Oya, which is yet to be constructed and commissioned.

New towns were built. Hospitals, schools, banks, markets, libraries, government offices and bus stands were constructed to provide essential services to the people of the new 'colonies'. A web of newly built main and sub roads connected Mahaweli settlements with each other and with the outside world. In summary, the AMDP is a mega engineering project involving multiple fields of expertise such as civil engineering, irrigation engineering, electrical engineering, geological and mining engineering, mechanical engineering, quantity surveying, etc.

3.1.2 A technological icon of national pride

As a scheme of massive infrastructure development the island had never witnessed before, the Accelerated Mahaweli Development Project was hailed by the J. R. Jayawardene government as a source of pride for Sri Lankans (Peebles 1990). Described as Sri Lanka's "core development project", the AMDP was presented as the way to emerge as a powerful nation in the Asian region, agriculturally self-sufficient and industrially developed (Tennekoon 1988). In contrast to the Aberdeen - Laxapana Hydro Electric Scheme that didn't receive the blessings of the Ceylonese State and the elite of Ceylonese society, the AMDP with full state sponsorship and advertised across the island with images of large dams, massive reservoirs, power stations and emerging settlements became the symbol of hope and prosperity of a new Sri Lankan state. The AMDP can comfortably be placed as the Sri Lankan equivalent of a series of modern engineering works that were flagged as objects of national pride in the literature on technology and national identities. Such works, objects of scholarly investigation and constructed over a time span of a few centuries and spread across the world, include the Port of Lisbon of Portugal (second half of the nineteenth century), the Eiffel Tower of France (late nineteenth century), the Firth of the Forth Railway bridge of Scotland (late nineteenth century), the Gotthard Railway of Switzerland (late nineteenth century), the electricity and railroad network of Russia (early twentieth century), the World War I Fighter Planes of Germany, the Sputnik Spacecraft of Soviet Union (1961), the Apollo Spacecraft of the USA (1969), the Palapa Satellite and the steel plant in Cilegon of Indonesia (late twentieth century), to name a few[124]. A discussion on the AMDP as a grand engineering intervention and how it relates to

[124] Canal du Midi (1660s-1680s), a major achievement of infrastructure engineering in the seventeenth century, is the object of discussion by Mukerji (2009) on infrastructure and national identity of French in their campaign to make France a New Rome. In a discussion on technological traditions and the national identities, Picon (2000) identifies the late nineteenth century great engineering works such as the Eiffel Tower of France, Firth and the Forth Bridge of Scotland and the Brooklyn Bridge of New York as objects of national pride. For Saraiva (2007) Port of Lisbon, Oporto's Crystal Palace, the Lisbon Railway Station, the Bethlehem Tower, the Railway network, the new Water Factory and the Polytechnic School were the symbols of a nineteenth century Portuguese technological nation. According to Bocquet (2007), rivers and ports constructed between 1860 and 1900 were the subject of special attention, as part of a great national project in Italy. In a discussion on nationalist narratives and space exploration Siddiqi (2010) refers to a range of artefacts that became national symbols and prestige objects signalling international leadership in variety of engineering disciplines such as the electricity network and the modernised railroads of

the mobilisation of nationalism in the island however, calls us to position the Project in a broader socio-political context.

3.1.3 From a thirty year plan to a six year accelerated plan

The history of Mahaweli development and the idea of diverting water to the dry zone, in fact, goes back to the 1950s, when a joint study conducted during 1958-62 by the United States Operation Mission (as USAID was then known) and the Irrigation department of Ceylon proposed the diversion of Mahaweli to supply water to lands in the North Central Province and to produce electricity with an installed capacity of 260MWs. However, a grand detailed plan to divert Mahaweli water emerged later in 1969 after another four year study was conducted, this time by a team of UNDP and FAO specialists with their Sri Lankan counterparts[125]. The report "Mahaweli Ganga Irrigation and Hydropower Survey: Ceylon", which was popularly known as the "Master Plan" came up with a thirty year plan to divert Mahaweli water in three phases that could be implemented stepwise[126]. Phase I included the diversion of Mahaweli water by constructing a dam at Polgolla and channeling that water to ancient tanks located on the southern borders of the North Central Province and the construction of reservoirs at Victoria, Ulhitiya and Ratkinda. Construction of the Moragahakanda multipurpose reservoir was part of Phase I of the Master Plan. Construction of the Maduru Oya and Randenigala reservoirs belonged to the Phase II of the thirty year Plan. After meeting the irrigation demand in Phase I and II, it was recommended that surplus water be diverted to the North Central and Northern parts of the island in Phase III through a canal called the North Central Province (NCP) canal (Food and Agriculture Organisation of the United Nations 1969; Ministry of Land, Irrigation ad Mahaweli Development 1992). The Master Plan, expected to be implemented from 1970 to 2000, envisages agricultural development of 900,000 acres of land under

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Lenin's Russia, World War I Fighter Planes of Germany, the Sputnik Spacecraft of the Soviet Union (1961) and the Apollo Spacecraft of the USA (1969). Based on the work of Hecht and Callon (2009[1998]) on nuclear power and the national identity of France (after World War II), Schueler (2008) relates the building and running of the Gotthard Railway with the changing conception of Swiss national identity (late nineteenth century) (Elsasser 2009). Barnes Wallis' mid twentieth century designs for supersonic swing-wing aircrafts and merchant cargo-carrying submarines that were supposed to resurrect the fallen glory of England were the object of discussion by Zaidi (2008). While discussing the Palapa Satellite (1960s-1970s) as a celebrated and an exemplary national achievement of Indonesia, Barker (2005) also lists exceptional developmental projects during the New Order that were meant to promote a sense of nationalism; the first toll road, Jakarta's Thamrin Boulevard and its strip of high-rises, large dams, Taman Mini and the national aircraft industry. The steel plant in Cilegon (1950-1975) by Moon (2009) and the National Airplane project (1980s-1990s) by Amir (2007) provide two more recent examples of technological systems from Indonesia that were presented as symbols of national pride.

[125] The fieldwork for the Survey was carried out over a period of three years in two stages, the final stage was executed between March 1965 and February 1967, and the second stage from February 1967 to May 1968 (Food and Agriculture Organisation of the United Nations 1969).

[126] Details of this work were first published in April 1968 in Ad Hoc Report No. FAO/SF: CEY 7. Final Report published in 1969 had three volumes - Volume I (General Report), Volume II (Feasibility Report for Phase I of Development) and Volume III (Organisational and Management Requirements) (Food and Agriculture Organisation of the United Nations 1969).

thirteen irrigation schemes designated "A" to "M" and installation of electricity generation capacity of 507 megawatts. The Central, Uva, North Central, Eastern and Northern Provinces were to receive water from the Mahaweli, covering forty percent of the land area of the entire island (Iriyagolla 1978; Cooke 1982). The left-wing United Front government led by Sirimavo Bandaranaike that came to power in 1970 initiated the implementation of Phase I of the thirty year Master Plan[127], after the brief inauguration by Dudley Senanayake's government in 1970[128], but lost power at the general elections the same year (Mahaweli Authority of Sri Lanka 1985). The Polgolla diversion was completed in 1976. Settlement in System H was underway (Peebles 1990).

It is against this background that the new UNP government elected at the 1977 General Elections decided to accelerate the thirty year long Mahaweli development programme. The AMDP earned its title "accelerated" when the J. R. Jayawardene regime decided to complete the thirty year Master Plan in six years[129]. The AMDP undertook several projects simultaneously which were to construct sequentially under the Master Plan. However, the project that was implemented under the AMDP was a scaled down version of the Master Plan, and omitted some of the important sections in the previous plan. Construction of Moragahakanda reservoir was abandoned, along with its linked canal, the North Central Province (NCP) canal. Of the Systems A-M designated in the Master Plan, only Systems A, B, C, D, G and H came under the AMDP. The Ministry of Land, Irrigation and Mahaweli development (1992) describes the basis on which the scaling down of the Master Plan was done. In comparison to the Master Plan which emphasised supplying water for irrigation, the focus of the AMDP was on producing electricity and controlling floods. The NCP canal, according to Ministry of Land, Irrigation and Mahaweli development (1992), was incapable of producing a return on investment on the above basis (p.27).

[127] Maithripala Senanayake led the process as the Minister of Irrigation, Power and Highways (Fernando 2000).
[128] C. P. De Silva was the Minister of Land, Irrigation and Power of the Dudley Senanayake government (Fernando 2000).
[129] The announcement that was made in September 1977, soon after the J. R. Jayawardene government came to power, was unexpected, according to Iriyagolla (1978). Interviews I held with former officials of the Central Engineering Consultancy Bureau (CECB) revealed one plausible reason for the decision to accelerate. It was a result of the demand immediately after the election by "all camps who wanted their project as priority" that led Jayawardene to decide to "do everything together". The pressure for prioritisation had come from local politicians, according to the source of information. The government displayed urgency even during the process of initiation. Responding to the question raised at the debate on the Second Reading of the Appropriation Bill for 1979 of inquiring into the wisdom of starting work even before the feasibility reports were received, Prime Minister Jayawardene added, "although the reservoir is planned and the feasibility report is being prepared, you know where the reservoir is going to be. So why not cut canals?". While referring to the series of questions asked in return by the respective member of the parliament, "where to? To irrigate what lands, to grow what crops, using what quantities of water?" Iriyagolla (1978) adds another, "at what cost?".

3.1.4 'Truly non - Sri Lankan'

Maithripala Senanayake, who was the Minister of Irrigation, Power and Highways of the Sirimavo Bandaranaike government under whom the first Phase of the Master Plan was launched, highlighted another important difference between the AMDP and Phase I of the Master Plan that was implemented during 1970-76. Sending a message in 1984 to the publication "Glimpses of Mahaweli" published by the Ministry of Mahaweli Development, he declared that the work completed during 1972-76 "was done without any fuss and high-powered propaganda, using 99.9% of Sri Lankan engineers, Sri Lankan consultants, Sri Lankan technicians, Sri Lankan skilled workmen and Sri Lankan work force" (Peiris 1984, p.39). Even though the services of foreign firms were obtained (such as for the construction of tunnels, undertaken by Ingra of Yugoslavia) the policy of the government was to use local expertise as far as possible, mobilising experienced local construction agencies like the River Valleys Development Board (RVDB), the Mahaweli Development Board (MDB), the Ceylon Development Engineers (CDE) and other local contractors[130] (Fernando 2000). Though a work of advanced engineering, the AMDP could not announce itself as a marvel of Sri Lankan engineering, because it depended almost entirely on foreign engineers, foreign technicians and foreign machinery. Feasibility studies were conducted by foreign consultants. Foreign construction firms constructed reservoirs, power stations, canals and main infrastructure for settlements with foreign funding received as loans or grants. The World Bank coordinated foreign finances required for the AMDP by holding special sessions at the Annual Aid Group Meetings by exclusively discussing the Accelerated Programme. Countries such as Sweden, UK, Canada, West Germany, USA, Saudi Arabia, Japan, European Economic Community, Kuwait, OPEC, Netherlands, Australia, Belgium, India and China[131], International Financial Institutions such as IDA, IBRD and ADB and UN organisations such as UNDP, UNFPA, UNTCDC, UNICEF and WFP all provided funding as loans and grants (Ministry of Land, Irrigation and Mahaweli Development 1982). The United Kingdom funded the Victoria Project and the bulk of assistance arrived as a grant. British companies Balfour Beatty and Edmund Nutt'all constructed the dam and tunnel as a joint venture while, another British company Costain International Ltd. was involved in the construction of the power station. European industrial giants such as Whessoe Boving, Boving and Co. Ltd., Hawker Siddley, BICC, Nei Reyrolle Ltd., Eve Construction Ltd., Herbert Morris Ltd., and GEC Electrical Project Ltd. were also involved at different

[130] By forwarding a critique on the approach of relying entirely on "local talent", Iriyagolla (1978) observes that the services of foreign consultants were called back when work done by locals encountered difficulties.

[131] Fernando (2000) provides a breakdown of project finances: NEDECO of Netherlands (implementation strategy), WAPCOS of India (Kotmale Project feasibility studies), JAICA of Japan (Moragahakanda Project, System C), SIDA of Sweden (Kotmale Project), ODA of UK (Victoria Project), CIDA of Canada (Maduru Oya Project), KFW of the Federal Republic of Germany (Randenigala and Rantambe Projects), and USAID of USA (System H, environmental study).

stages of construction. The consulting engineering company for the project was the British firm Sir Alexander Gibbs & Partners in association with Preece, Cardew and Rider[132]. The Swiss firm Losinger AG, who had wide experience in construction of arch dams, was the adviser to Balfour Beatty and Edmund Nutt'all. The Kotmale project which was financed comprehensively by a grant from the Swedish government, was constructed by the Swedish company Skanksa Cementgjuteriet. Two British companies, Sir William Halcrow and Partners and Kennedy & Donkin provided consultancy services. The Swedish company ASEA carried out the construction of the power station. Maduru Oya, funded by a loan from the Canadian government, had Canadian companies FAFJ and Crippen International respectively for construction and consultancy services. West Germany provided a loan for the construction of the Randenigala reservoir. Consultancy services were provided as a joint venture by the German companies Saltzgitter Consult GmbH, Electrowatt Engineering Services, Ahar and Hydrotechnik (Cooke 1982; Mahaweli Authority of Sri Lanka 1985).

The story of the AMDP as narrated in the sphere of engineering literature provides lengthy details of the reservoirs, power stations, maps of "water issue trees"; including information about the consultancy firms and construction companies involved from the stage of conducting feasibility studies to actual implementation, and details on the sources of funding that made each stage possible. It is the narrative of the AMDP as a great work of modern engineering, with an occasional reference to the ancient glory of irrigation engineering of the Sinhalese. Cooke (1982) while providing a detailed technical description of the AMDP refers to the discovery of the sluice of the ancient tank located almost at the exact location of the proposed sluice of the modern reservoir, at the site of the Maduru Oya (p. 42)[133]. Fernando (2000) too, refers to "the unique sluices that were developed by our ancients and were found in all major reservoirs"[134]. This occasional reference is included as evidence of the advanced status of ancient irrigation engineering and also to highlight the point that the knowledge of engineering that lay behind these ancient constructions was as advanced as modern engineering. Though occasional, these

[132] Interestingly, Preece, Cardew and Rider was the same consulting firm that provided consultancy services for the Aberdeen-Laxapana Hydro Electric Scheme, and whose role was questioned by the local members of the Sub Committee appointed by the Legislative Council.

[133] Under the title "Ancient *Bisokotuwa* [sluice]" Cooke describes that "it is built out of brickwork and has two conduits almost in the same alignment as the new sluice. In order to preserve this ancient structure, the new sluice channel is being deviated and taken through a tunnel, without disturbing the old *Bisokotuwa*".

[134] It was Fernando himself, who discovered and recorded the ancient sluice of the Maduru Oya dam in 1982. "But before that", says Fernando, "several ancient sluices were discovered and recorded at first hand for posterity by renowned pioneers and scholars in the course of field investigations, by Dr. John Davy (1812), Sir Emmerson Tennent (1845), Henry Parker (1890) and R. L. Brohier (1933)" (Fernando 2000).

references play an important role in regaining pride in Sri Lankan engineering, in the technical narrative of the AMDP, otherwise written almost entirely by foreigners.

An investigation into how the AMDP appeared in the Sinhala nationalist narrative in general, however, demands a more detailed treatment of the relationship between the two terrains of engineering and nationalism. Developmental nationalism, the discursive space used in discussing the link between Aberdeen - Laxapana Hydro Electric Scheme and the Ceylonese developmental nation, doesn't fit well with the AMDP. The popular discourse generated by the government propaganda machine with the AMDP at the centre was not really about the mobilisation of the imagination of the island's population towards a modern Sri Lankan nation, as was the case with the Hydro Electric Scheme. The AMDP therefore differs from most of the grand technological works mentioned above, which remained symbols of the national pride of modern nations across the globe. Most of them mark a break from the pre-modern past and instead, visualise a fresh modern future. The heavy dependency of the AMDP on foreign expertise and resources has also prevented a straightforward claim by the Sinhalese of ownership of the project. What then were the strategies used to establish the link between the two terrains of engineering and nationalism? Is the AMDP an exception or does it still share commonalities with at least some of the case studies of technological systems that appear in the literature on technology and national identity? What kind of politics were at play in shaping the AMDP into its final form during the last century and how has the AMDP affected politics in return and nationalist politics in particular? A general discussion on the politics of artefacts and technological systems seems to provide an entry towards answering some of these questions.

3.2 Multiple faces of the AMDP

As has been the case with many other water engineering projects in the world, the AMDP too was a site of power politics, nationalist in particular. Conducting a comparative study on anicuts and tanks in India, dikes and storm surge barriers in the Netherlands and levees in New Orleans in the United States, Bijker (2007) concludes that the water-related technological systems under discussion are thick in connections and linkages, thick with values, thick with power and thick with politics. The Narmada Dam in India, a project I would like to compare with the AMDP in relation to their inherent technical complexity, is considered by Bijker as "too thick" (with politics) for him to deal with in a single paper as his one on "Dikes and Dams, Thick with Politics". The politics of technology, how technology shapes politics and how politics impacts technology in return is a long held debate. Since its symbolic inception with the

publication of the article "Do Artefacts have Politics" by Langdon Winner (1980) the debate has evolved in two directions. It has, on the one hand, broadened its coverage from the micro world of technological artefacts to the macro world of technological systems and technological spaces such as cities, public spaces, markets, water works, etc. (Matthewman 2011, p. 101). The Sri Lankan irrigation network, the site of modern water engineering itself, was treated by Pfaffenberger (1992) as a "technological drama", by taking into consideration the antagonistic power politics involved in the process. The understanding that technology is not just technical but institutional, social, economic and political has made technological system the fundamental unit of analysis, irrespective of whether the system under consideration is a simple technical arrangement (i.e. technological artefact) or a complex one (Bijker 2010). The debate that has evolved has also attempted on the other hand, to describe in detail how technology becomes an expression of power and politics. Machines, structures and systems of modern material culture are seen within this discourse as accurately judged not for their contributions of efficiency and productivity, but for the ways in which they can embody specific forms of power and authority (Winner 1980; 1993a). By taking examples of technological applications Winner (1980) describes the two ways in which technologies can be involved with politics: either the technical device or the system becomes a tool to settle a political issue in a particular community (e.g. low-hanging overpasses built over the parkways on Long Island by Robert Moses, the Master Builder of roads, parks, bridges and other public works from the 1920s to the 1970s in New York) or, by moving a step further, contains politics as an inseparable element of technology within a given context (e.g. oil, coal and nuclear power energy technologies and atomic bomb). In which way is the AMDP, as a project that falls easily into Bijker's categorisation of water technologies "thick with politics", involved with politics? Was it a tool to settle a nationalist issue of the island? Or was Sinhala nationalism an inseparable element of the AMDP? Winner's initial argument and the subsequent debate that evolved provide an alternative discursive space to examine the AMDP and to revisit some of the ideas discussed and debated within the discourse on the politics of artefacts and technological systems.

In the following sections I would like to briefly look at five attempts that have been made so far to make sense of the AMDP so that this discussion on the politics of the AMDP, especially in relation to nationalism, can be conducted further. I would like to add the *Mahaweli Vansaya*, the Chronicle of Mahaweli that was written in parallel to the implementation of the AMDP in the 1980s but which has not received adequate scholarly attention as yet, as the sixth case in broadening the above mentioned discussion. The said discussion will also be a comparative analysis of the AMDP with other engineering interventions in the world which became national symbols. The seventh and the eighth cases, "Yaan

Oya - Malwathu Oya - Maduru Oya Operation" (an unsuccessful and less discussed operation executed at the premises of the Central Engineering Consultancy Bureau, Sri Lanka to change the AMDP map) and "North-Central Province Canal" (the key element of the Master Plan that was included in and excluded from the AMDP at various times, indicating "thick politics" expressed in terms of engineering) would broaden the discussion further to incorporate the role of engineers in mediating technology with nationalism.

The five attempts, with narratives already established and with appeal to different segments of the Sri Lankan society, can be seen to provide a textual ground to lay the technical sketch of the AMDP, which consists of a complex web of dams, reservoirs, canal, power stations, roads and cities, allowing meaning to emerge from an otherwise meaningless skeleton made out of cement, sand, metals, tar, etc. Within the context of our discussion, these narratives describe the political function of the technological system, the AMDP. Treating technology as a narrative or discourse was dealt by different scholars under different titles. While Woolger used the term "text", Pfaffenberger preferred the word "drama" (Matthewman 2011, p. 80). The five narratives introduced below can be read as different interpretations of "the AMDP text" according to Woolgar (1991), or as a collection of dominant texts and remedial responses of the technological drama, the AMDP, according to Pfaffenberger (1992).

3.2.1 Narrative 1: As a modern mega development project dressed up as an attempt to reclaim indigenous national culture

The AMDP is perceived in general as a mega development project. Through the functions of irrigation and generation of electricity, it was designed to generate employment, bring economic benefits, ensure food security in the island and boost industrial development through a policy of economic openness. The narrative constructed by the government in the public sphere however, did not highlight this liberal economic vision which cemented the conditions of modernity, a vision that also marked a clear departure from the left-oriented economic model followed by the previous, United Front government. In contrast, the AMDP, according to this narrative, is a scheme that was implemented to achieve contradictory objectives[135]. While establishing the material conditions of modernity in the island by

[135] "Mahaweli: A Moving Story", a booklet with photographs published by the Mahaweli Authority of Sri Lanka to mark the ceremonial commissioning of the Victoria reservoir on the 12th April 1985, provides a good example to illustrate this duality. The booklet carries a series of photographs: President Jayawardene in national attire, an aerial view of the Mahiyangana pagoda surrounded by dry zone forest, a painting of D. S. Senanayake by Stanley Abesinghe, an aerial view of *Gal Vihare* statuary, Polonnaruwa, Dimbulagala ruins - System B, the restored pagoda in Somawathiya (white washed) with a tank nearby, people moving out to System C in lorries carrying furniture and sewing machines, hopeful settlers in temporary cadjan-huts, ancient statuette and old brickwork unearthed in Girandurukotte, sculpture discovered in an ancient sluice way, Maduru Oya, a

privileging "science and technology and a centralised state bureaucracy" and incorporating "agro-industrial production and distribution into a capitalist market-economy" on the one hand, the AMDP served, on the other hand, to reincarnate the "ancient, indigenous, national culture whose features are ethnic (Sinhala) and religious (Buddhist)" (Tennekoon 1988, p. 297). 'Dressing up of modernity', essentially a project derived from the West and hence a scheme alien at best or antithetical at worst to the indigenous culture, as an exercise that upheld the tradition of indigenous national culture, was mediated by the heavy use of rituals of development. By taking the case of ritual practice at the site of AMDP, the *Jala puja* (water offering ceremony) performed along with the commissioning of the Kotmale reservoir, Tennekoon argues how a modern present was dressed up as traditional past to metamorphose market-oriented technologically advanced infrastructure development not as a movement towards the future but as a journey to the Sinhala past, to reclaim the past glory of the ancient hydraulic culture of the Sinhalese (Ibid)[136]. The *jala puja* serves as a continuation of an ancient tradition, bridging the present with the past. The selection of sites that are of significance to Sinhala-Buddhists reinforced the image of the AMDP as a project exclusively for the members of the majority community [137] (p. 298). The AMDP therefore, with the mediation of rituals of development derives legitimacy from the Sinhala Buddhist constituency by masking modernisation as a visit to the imagined glorious past of the Sinhala nation. The narrative represents the general understanding of the AMDP by

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kiln found in Girandurukotte, construction worksites (Victoria dam, Victoria penstocks and turbines, high tension lines from Victoria to Kotmale, the switchyard in Victoria power station), young minister Gamini Dissanayake in a white collarless shirt with a glass of artificial fruit juice in his hand, smiling settlers in new clothes with the new harvest, members of a family engaged in farming, aerial view of giant constructions of Polgolla barrage, Bowatenna dam, Ulhitiya reservoir and Maduru Oya dam, a close view of Victoria and Kotmale dams under construction, Bambaragala cave monastery, emerging new town of Girandurukotte and an elephant leaving Teldeniya town submerged by Victoria water, Buddhist centre under construction in Girandurukotte with an isolated misty mountain in the background, peasants with hopeful looks and children attending new schools in new settlements. The photograph of a close view of Ruwanweli pagoda carries the following caption; "The government of Dudley Senanayake made a vow in 1970 when the Mahaweli Development Project was inaugurated that the Ruwanweli Seya will be illuminated by flood lights on the successful completion of the programme. On the 4th April 1985 the Hon. Minister of Lands, Land Development and Mahaweli Development fulfilled the vow by illuminating the Ruwanweli Seya to mark the ceremonial commissioning of the Victoria Project - the biggest power source within the Mahaweli System and the centre-piece of its irrigation network" (Mahaweli Authority of Sri Lanka 1985).

[136] Tennekoon identifies development not just as production and distribution of material benefits, but also as a discourse that was constructed using different tools such as political speeches, national and international conferences and meetings, local media coverage, advertisements of events, documentaries and feature films, opening ceremonies, exhibitions, carnivals, concerts and rituals (Tennekoon 1988, p. 295). *Jala puja*, a ritual of development, reminding people of the tradition of offering water for good luck, dispatched water taken from the Kotmale reservoir in separate processions to be offered at holy sites. "The processions of Kotmale water, in particular, and the Mahavali Program, in general, conveyed symbolically the Mahavali Program throughout the "length and Breadth" of the country", argued Tennekoon (p. 298). Processions that ended significantly inland from the eastern and northern boundaries of the country (compared to the final destinations of the westbound and the southbound processions) also highlighted the parameters of the shrinking Sinhala Buddhist state as a result of the emerging militancy of the Tamil separatist movements at that time, according to Tennekoon (p. 299).

[137] "Two pots were conveyed to the Dalada Maligava, the Temple of Tooth Relic of the Buddha and the remaining twenty eight pots were taken in the north, south, east and west directions. The northbound procession headed for the Sri Maha Bodhi - the sacred Bo tree - at Anuradhapura, the southbound for the Kiri Vehera at Kataragama, the westbound procession for the Kelani Vehera near Colombo and the eastbound one for the Mahiyangana Vehera", according to Tennekoon (1988, p. 298).

a section of intellectuals and academics who in particular entertain a critique of Sinhala nationalist rhetoric.

3.2.2 Narrative 2: As an indigenous development project

If Tennekoon identifies rituals of development as a tool that facilitated a journey of the Sinhala nation towards an (imagined) past and helped metamorphosise modernisation as tradition, Hennayake (2006), by introducing a category "indigenous development" makes the agriculturally and spiritually developed past a living experience, a reality. By deviating from the trend of treating the notion of glorious past as a myth, the memorable past is made here a "lived reality" for the Sinhalese (p. 52). "Discourse of development in any society is constitutive of competing conceptions of development - which simultaneously could be contradictory, complementary, and even collaborative at times", says Hennayake (p. 2). The Sri Lankan discourse of development, according to this narrative, is shaped by three competing versions; capitalist, socialist and indigenous, of which the indigenous version has been in the forefront in the process of conceptualising (p. 47). Clarifying further, the indigenous discourse of development is said to be formed by the intertexuality of three texts; Sinhala-Buddhist ideology (i.e. the understanding that Sinhala-Buddhists are a distinct group with a distinct history and a legitimate right to the island), the notion of a glorious past and the Buddhist theory of development, which refers not only to material wellbeing, but to spiritual and cultural wellbeing as well (pp. 48, 56). The notion of a glorious past, the image of the hydraulic civilisation of ancient times is represented by grand irrigation schemes, self-sufficient villages and righteous governance (a society with higher morality) with the dry zone as the heartland of Sinhalese civilisation and peasantry as its backbone (pp. 50, 51, 55, 65, 103). The AMDP, or rather the image of AMDP constructed by the government in the public sphere, fits tightly with the framework of a glorious past[138] and the model of indigenous development[139] formulated in the above narrative. The modern mission of the AMDP, economic growth to be achieved though liberal economic policy, is argued as a mere "means" of the larger aim; the rebuilding of the society with higher morality as that of the "glorious past", notes Hennayake, by referring to the conscious effort made by the state to redefine development within an indigenous framework (p. 103). Though influenced heavily by Sinhala Buddhism in its conceptualisation, indigenous development is portrayed as an appropriate development

[138] The AMDP, in fact, was a grand irrigation scheme that provided water for irrigation to peasantry living in isolated *purana* villages as well as those settled in new colonies of the dry zone, the heartland of the Sinhalese.

[139] *Dharmista Samajaya* (righteous society), the rhetoric the UNP regime propagated at the time as a fundamental guideline in governance, was about the spiritual and cultural wellbeing of the nation.

model that serves the interests of all ethnic and religious communities[140]. Dry zone development, the focus of the AMDP, is awarded legitimacy within the context of this discourse by identifying it as a key priority of the postcolonial state for two reasons. It was demanded on the one hand, by the practical necessity to improve the institutional and the infrastructural conditions of the dry zone and on the other, by the ideological need to resurrect the lost glory of an ancient culture after colonial rule ended[141] (p. 108). Seeing the AMDP as an indigenous development project is more or less the narrative propagated by the Jayawardene regime and received well by the public in the late nineteen seventies. The early nineteen eighties proposal by Sinhala nationalists to designate the ancient kingdom of Anuradhapura as the capital of Sri Lanka emerged out of this narrative on indigenous holistic development. The narrative is still held as valid by those who are in favour of a development model based on dry zone agricultural development.

3.2.3 Narrative 3: As a project to promote the image of Gamini Dissanayake

The AMDP is also highlighted as a personal political project of the then Minister of Lands, Land Development and Mahaweli Development, Gamini Dissanayake[142]. Numerous advocacy material released by the Ministry carried photographs of Minister Dissanayake often dressed in white (in national attire or in suits) and wearing a pair of sunglasses while on tours of inspection and at opening ceremonies. The Project, according to this narrative, served two objectives that were not addressed in the narratives discussed above: to promote the political image of Dissanayake and strengthen his vote base within the island in general and among peasants, in particular. The success of Dissanayake's political journey of to the top, and of his ambition to become the leader of the UNP and eventually the head of state as the president, was dependent entirely on the success of the AMDP. The competition was with other contenders, the second level leadership of the J. R. Jayawardene regime, who had their

[140] The conception of the AMDP as a scheme of reclaiming the traditional heartland of Sinhalese is argued by Hennayake more as a rhetoric used for political legitimacy (p. 107).

[141] The idea of dry zone development and hence the AMDP as a need of the Sri Lankan state that transcends interests of a particular community is further clarified when Hennayake says that "material necessity for development of the dry zone itself has been often overlooked as a compelling reason to rebuild the dry zone as a result of Sri Lankan Social Sciences being overtly ethnicised by reading every aspect and change in the society as a "nationalist conspiracy" of the Sinhala Buddhists especially after 1983" (p. 108).

[142] The credit of initiating the diversion of Mahaweli River was claimed by many. Iriyagolla (1978) lists down eleven claims made by partisans as to who originated the idea: (i) D. S. Senanayake by restoring the Minipe anicut in the early 1940s. (ii) S. W. R. D. Bandaranaike by negotiating with the United States Operation Mission (U.S.O.M) in 1957. (iii) C. P. De Silva by negotiating with the U.S.O.M. in 1957 (iv) Dudley Senanayake by commissioning investigations for a dam at Randenigala in the period 1947-52. (v) Sirimavo Bandaranaike by negotiating with the UNDP in 1964 (vi) K. Balasingham by agitating in the Legislative Council in 1920s. (vii) U. B. Unamboowe by raising it at a meeting of the Central Board of Agriculture in 1951. (viii) Robert Gunawardene by raising the matter in Parliament in 1956. (ix) H. B. Tenne by writing letters about it during 1947-52. (x) T. B. Tennekoon by raising the matter at the Matale D.A.C. in 1956. (xi) D. S. Senanayake, Dudley Senanayake, C. P. De Silva and J. R. Jayawardene by coming up with the idea of diversion while standing in conversation on a river bank near Polonnaruwa in 1938.

own signature projects and maintained highly visible public profiles, in Tennekoon's words, "through the mass medium of development celebrations"[143] (Tennekoon 1988, p. 304). While remaining at the centre of the AMDP which was said to be launched with the aim of resurrecting the past glory of the Sinhala civilisation, Dissanayake, within this narrative, was portrayed as the reincarnation of the hero-king Dutugemunu who saved the island from Tamil invaders and united the country. Parallels were drawn between Dissanayake and Dutugemunu using the relationship they both had with the hill country town of Kotmale. The folklore that Prince Dutugemunu lived in disguise in Kotmale, Dissanayake's hometown, was highlighted and re-established in the Mahaweli narrative. The narrative propagated by the Dissanayake camp was received well by the UNPers in general and the followers of Dissanayake in particular during the Jayawardene regime and was reproduced when Dissanayake contested the Presidential elections in 1994.

3.2.4 Narrative 4: As a Sinhala colonisation project

The creation of Sinhala colonies under the banner of dry zone development is an exercise long contested by the minority communities, especially by the Tamils (International Crisis Group 2008). The AMDP is considered just an extension of the process of colonisation being conducted since the early twentieth century. Farmer (1957) identifies three phases of colonisation: 1815-1914 where there was little government sponsored colonisation; 1915-1930 where colonies were established successfully on an experimental basis; and 1931-1951, the era of active and rapid colonisation[144]. D. S. Senanayake who served on the colonial Land Commission, served as the Minister of Agriculture and Lands in the colonial government and who became the first Prime Minister of independent Sri Lanka, played the pioneering

[143] Prime Minister R. Premadasa had the *Gam Udava* (Village Awakening) programme in his name, where existing villages were rebuilt, renamed and returned to villages. These villages with a collection of identical small housing units were called "model villages" in the Premadasian terminology. The *Gam Udava* "exhibition" held annually in a main town of the island that coincided with his birthday, was a week-long celebration that established his identity as the champion of *Nethi Beri People*, the poor. Lalith Athulathmudali, the Minister of Trade and then National Security, another contender, had his trade mark project Mahapola to his account. Mahapola was a combination of instruments: a massive trade fair held regularly in different parts of the island, a lottery and a scholarship scheme for university students who passed the university entrance examination with merit. Finances generated through the lottery were channeled to fund the scholarship scheme. The post of Minister of National Security awarded Athulathmudali an additional significance within the Sinhala constituency. Ranil Wickremesinghe, then the Minister of Youth Affairs and Employment, though not as senior as Dissanayake, Premadasa or Athulathmudali, was also considered a contender as a result of his relationship to President Jayawardene. The National Youth Services Council, which provides vocational and career training forschool leavers, became Wickemesinghe's signature project.

[144] Out of the thirty one dry zone colonies founded by 1953, Minneriya (1933) and Parakrama Samudra (1942) in the North Central Province and Gal Oya (1951) in the Eastern Province were the largest. While most of these colonies were concentrated in the North Central Province, two adjacent Tamil colonies were established in the Wanni in the Northern Province by 1953 (Farmer 1957, pp. 146, 164-165).

role in dry zone colonisation[145] (Ibid, pp. 143-145). The trend of colonisation continued since independence from the 1950s and the 1960s and 1970s[146] to the 1980s and 1990s, transforming the dry zone from a plural society to a homogeneous Sinhala Buddhist one[147] (Peebles 1990, p. 40). Official colonisation was accompanied with unofficial encroachment. The figure for encroachment probably numbers in the tens of thousands, a case that is more relevant to the AMDP (Peebles 1990, p. 47). According to some reports the number of people settled through non-official colonisation outnumbered the officially sponsored settlers (International Human Rights' Association, Bremen 2013). Even by the mid twentieth century, the establishment of Sinhala colonies in the Tamil dominant regions of the island topped the agenda of Tamil politics. In 1944, the Tamil Congress complained to the Soulbury Commission of Sinhala settlements in the Eastern and Northern provinces (Peebles 1990, p. 37). The demand to reserve the entire Gal Oya scheme for the Tamils on the grounds that it lies in the Eastern Province, which is predominantly Tamil, was made in 1951[148]. This too was the case for the Kantalai colonisation scheme (Farmer 1957, p. 300). The Federal Party at its annual convention in 1956, passed a resolution against the settlement of Sinhalese in the traditional homelands of the Tamils and called for an immediate cessation of colonisation. The Bandaranaike-Chelvanayagam Pact of 1957 and the Senanayake-Chelvanayagam Pact of 1965 both recognised the special rights of the Tamils in colonisation schemes in the Northern and Eastern Provinces. The Tamil United Liberated Front which was the main Tamil political party by 1976, listed the colonisation of historically Tamil territory by the Sinhalese in the well-known Vaddukoddai resolution, as one of the nine justifications for the separate state of Eelam (Peebles 1990, p. 38). According to this narrative, held legitimate in particular by the intellectuals and the politicians of the Tami community and those who sympathise with the Tamil cause, the "Tamil Homeland" in the Northern and the Eastern Provinces was a response by the Tamils to counter the Sinhala perception of an idyllic Buddhist past in which dry zone irrigation provided the resources for a prosperous and cultured civilisation to which officials of the AMDP appealed directly (Ibid, p.41). The

[145] This tradition was continued by his son, Dudley Senanayake who too became Prime Minister of the island (Ibid, pp. 143-145).
[146] The approach towards dry zone settlement went through a technical change specially during the United Front government from the 1970-1977 with focus shifting to cooperative farming and participatory decision making (Amarasinghe 1976, pp. 629-632). Interestingly, Amarasinghe's list of main criticisms of the old settlement schemes (implemented before 1966) does not incorporate the main criticism forwarded by the Tamil people, the Sinhala bias in dry zone colonisation (1976, p. 626).
[147] By 1981 seventy percent of the population of Polonnaruwa (previously known as Thamankaduwa), one of the two districts of the North Central Province, for example, were colonists and almost all of them were Sinhalese (Peebles 1990, p. 40). The ethnic composition of the Eastern Province went through drastic changes during the twentieth century for which colonisation was a contributory factor (Roberts 1979; UTHR(J) 1993a). According to statistics representing the Tamil point of view, more than 165,000 Sinhalese have been added to the population of the Eastern and Northern provinces though colonisation schemes between 1953 and 1981 (Manogaran 1987 in Peebles 1990, p. 51).
[148] Farmer (1957) identifies three types of communalism involved with colonies. He refers to clashes between Kandyans and Low Country Sinhalese as well as to rifts between adjacent tracks in the same colony occupied by different communal groups. Tamil reaction to Sinhala colonies in Tamil areas was the third category of clashes (Farmer 1957, p. 300).

militarisation of the colonies took place by installing units of the Sri Lankan armed forces and by arming colonists as a civil defence force and this heightened the Tamils resistance to colonisation schemes, since the 1980s. According to this discourse, dry zone development, was seen as a matter of military cum political administration and as colonisation of Tamil areas in which Mahaweli Authority played a central role (International Human Rights' Association, Bremen 2013).

3.2.5 Narrative 5: As a project preventing industrialisation

Rather than being seen as a modern development project, the AMDP is treated here as an extension of an attempt by colonials and the Ceylonese elite to, rather, prevent development by preventing the industrialisation of the island. According to this narrative, which can be assumed to be popular among certain sections of the left leaning community who believe in technological development as the way forward, the ultimate results of the colonisation of the dry zone including colonisation by the AMDP, are extreme poverty, civil war and the enormous debt of loans taken for construction that future generations would have to pay back (Pfaffenberger 1992, p. 290). It also disagrees with the notion of indigenous development on technological grounds and deviates, as well, from the colonisation narrative that dry zone development is originally and always a project against the Tamils. According to this narrative, dry zone colonisation, which was a process initiated in the early parts of the twentieth century, was based on two objectives: to diffuse the frustration and anger of the peasants whose traditional villages were circumscribed by British plantations and to deflect attention away from the Ceylonese elites who served in them and; to discourage industrialisation by packing the landless off to dry zone settlements where they could do no harm. As the architects of the project, dry zone colonisation paved the way for Ceylonese elites to become the self appointed champions of the Sinhala Buddhist peasantry (Ibid, p. 289). The promotion of agricultural development forestalled the expansion of industrialisation in a context where Marxist parties were already making significant inroads among the industrial workers who were working for the few industries and infrastructure services established at the time (p. 288). At the centre of this mass mobilisation of landless Sinhalese peasants to the dry zone was the myth of a morally and spiritually superior traditional Ceylonese culture which was symbolised by the rice-growing, quasi-democratic, autonomous and self-sufficient village, closely united by Buddhism (p. 289).

While questioning the factual accuracy of this myth, Pfaffenberger (1990) highlights an important technical feature of the irrigation settlements of ancient civilisations; strong norms of equity in distribution of water which ensured the use of an equal quota of water by every peasant (p. 372).

Referring to the strongly negative effect of gravity flow irrigation - the use of gravitational force to distribute water stored in a reservoir, where peasants at the top end receive water more regularly and in greater amounts compared to the ones at the bottom end, leading insidiously to strengthen disparities in class relationships, Pfaffenberger identifies this norm of allocating a fixed quota of water as the foundation of ancient agricultural civilisation in Ceylon[149] (pp. 362-3). British land policy, however, overturned this practice of juggling of landholdings that ensured a fixed quota of water, in favour of a system where each peasant was provided with a fixed plot of land (p. 378). This transition of focus from water distribution to land allocation in twentieth century colonisation marked the decisive break from the irrigation settlements of ancient civilisations[150]. The ancient hydraulic civilisation that dry zone colonisation attempts to resurrect is therefore a misconception, according to this narrative. The image of a romantic village that was produced and reproduced in colonisation literature where peasants occupy fixed plots of lands is, hence, a colonial construct as well.

3.2.6 Technology as a text/drama

These five narratives help us to make sense of the AMDP, highlighting the key role played by the Project in the individual, group and ethnic politics of the island and hence, qualifying the AMDP to rank alongside the water-related technological systems in India, the Netherlands and the USA which are, according to Bijker (2007), thick with politics. Even though the two ways suggested by Winner (1980) through which technologies can be involved with politics (i.e. either to settle a political issue in a particular community or to contain politics as an inseparable element) have not received further attention, mainly as a result of the weakness of the particular example he has used to prove the point (i.e. Moses' designs of overpasses)[151], the above discussion on the AMDP encourages one to have a

[149] He refers, as proof of this ancient practice, to the observation made by Edmund Leach when he conducted his field work in 1950s in Pul Eliya, a *purana* village in the northern part of the island. Leach notes that every holding in the well-watered upper field was matched by a corresponding plot in the less advantageously situated lower field (Pfaffenberger 1990, p. 374).

[150] The Crown Land (Encroachment) Ordinance of 1840, under which lands where ownership could not be proved were assumed to be state land and reserved later for colonies, is considered the cornerstone of this major transformation (Ibid, p. 382). Unlike in the discourse of colonisation that saw dry zone development as a project to infiltrate the Tamil homeland and which hence referred to the Land Development Ordinance of 1935 and the Crown Land Ordinance of 1947 as the primary tools that defined the legal mechanism of colonisation, here the Crown Land (Encroachment) Ordinance of 1840 is considered the main pillar of colonisation.

[151] By quoting from the biography of Moses by Robert Caro, Winner argued that Moses' social-class bias and racial prejudice affected his designs of overpasses and in return discouraged the presence of buses, the vehicle of the poor and the blacks, on his parkways. The selection of Moses' overpass to prove Winner's point that a technological system becomes a tool to settle political issues however, attracted challenges from different quarters on different grounds, resulting in strengthening the discourse on the politics of technology. In an essay title "Do Politics have Artefacts" Joerges (1999) challenged Winner's story as a well-constructed artefact in itself. Te Long Island Expressway was built in addition to the parkway, that many routes to Jones Beach were open to all, argued Joerges. Woolgar and Cooper (1999) in their article "Do Artefacts have Ambivalence? Moses' Bridge, Winner's Bridge and Other Urban Legends in S&TS" saw the Long Island bridge story as an "urban legend". However, by

second look at his proposal. One can argue that the function of the AMDP in each narrative indicates to its role, either in settling a political issue (e.g. mediating modernity with tradition with the aim of ensuring the political survival of the governing regime, development of the dry zone as a key priority of the post-independence Sri Lankan state, providing an avenue for the second level leadership to the political top, etc) or even suggest that the AMDP is nothing but a political project (e.g. colonisation of Sinhalese in areas of high concentration of Tamils) under the guise of dry zone development. While Winner's narrative provides a single unambiguous version of politics at play in Moses' overpass, the AMDP in contrast is open for multiple interpretations of its political role. The difficulty of providing a definitive version of politics at play was a topic discussed at length. For some, this flexibility of interpretation is an inherent nature of a technological artefact or a technological system whose biography has two phases; an initial phase during which the meaning is yet to be determined (i.e. the stage of interpretive flexibility) and the final phase during which a particular meaning becomes privileged and the role of artefact becomes stabilised or "black-boxed" (i.e. the stage of closure and stabilisation) (Pinch and Bijker 1989[1987], pp. 40-44; Latour 1987, p. 2-3; Barker 2005, p. 705). Accordingly, the uncertainty caused by multiple interpretations is short lived. However, this narrative of treating technologies as objects necessarily passing through the two phases described above, is challenged by others. For them technologies appear to be in endless states of evolution with no intention of stabilisation and closure (Khoo 2005). The AMDP, as a technological system, seems to follow this latter argument. As it can be seen in the discussion on "North Central Province Canal", a case I'm going to discuss at the end of this Chapter, the AMDP is still in a state of evolution even at the time of writing, with exclusions and inclusions of canals to the existing water infrastructure of the AMDP, within a backdrop of continuous ethno-political tension.

Are technological systems capable of political representation? Opinions on this seem diverse. At one end of the spectrum in my opinion, is Latour (2006). For him a technological system is incapable of a clear political representation. The involvement of a range of stakeholders with diverse political interests prevents this possibility[152]. But for Woolgar (1991), Pfaffenberger (1992) and Woolgar and Cooper (1999) political representation is possible, but not unproblematic. "Same technology can have different

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arguing that a definitive story cannot be told and the true intentions of designers cannot be known, Woolgar and Cooper considered Joerges to be guilty of the same mistake made by Winner. Writing a short essay on "Which Politics for Which Artefacts?" Latour (2006) dismissed Winner's thesis as 'pure ideology' and 'conspiracy theory". According to him, Moses' intention was to keep trucks off the parkways and not buses, hence invalidating the point Winner was trying to make.

[152] The problem, according to Latour (2006), "is that if we sort of know how to describe a bridge or a building in its material composition, we are yet unable to draw together all the stake holders which have to be assembled for this bridge or this building to have a political representation".

(political) effects in different situations", argues Woolgar (1991)[153]. Woolgar in a joint publication with Cooper argued for a case of ambivalence of artefacts (1999). Technologies are seen as multiple and varied according to this narrative, and the story of politics at play is considered to be dynamic, shifting and essentially inconcludeable, as one can witness in the case of the AMDP. It is this nature of interpretive flexibility of the political role of artefacts and technological systems that led Woolgar (1991) to treat technologies as "texts". By paying attention to how and why readings of technology are performed, this approach of treating "technology as text" insists that readings of technology text are accomplished both by technologists subjects (e.g. governments, politicians, ethnic communities, engineers as in the case of the AMDP) and by the analyst in the course of sociological argument (e.g. scholars who have contributed in constructing discourses described above, as in the case of the AMDP) (Woolgar 1991, p. 39). By reading technology as a "text" he describes how a technology as an instrument earn different meanings (i.e. interpretive flexibility) and suggests how an "interpretivist" could study ways in which technology texts are written and read[154] (pp. 37-38). However, for Pfaffenberger (1992) technology and politics are further interwoven. At least some technologies he identifies under the category of "technological dramas" are specifically technological forms of political discourse (Ibid, p. 282). In his theoretical formulation, political groups, values and technological artefacts are "reciprocally and recursively constructed in interaction with each other, producing an outcome that ideally generates both political authority and technological system" (p. 290). He highlights another aspect in relation to this discussion on politics of the AMDP, antagonism between technological texts, and prefers the metaphor of "drama" to that of "text". Out of the entire spectrum of interpretive texts, he calls some "dominant texts" (or "statements") and the rest, marginal ones, as "corrective responses" (or "counter statements") which according to him are remedial technological activities (p. 285). Corrective responses or counter statements highlight the effort by the affected disenfranchised groups to attack the ambivalence in the technology's frame of meaning and to make meaning anew. Within the context of the AMDP, I would like to consider the first three narratives that fall in line with the rhetoric of the Southern government as "statements" in a Pfaffenbergian sense while considering the last two, representing the voices of the disenfranchised (e.g. Tamils and non-elites), as "counter statements". The function of each narrative described above is not limited to allow one to make sense of the Project.

[153] For Woolgar (1991) "determining the effects of a technology is an intensely difficult and problematic exercise, and one requires a good theory of how society works, an understanding of the overall dynamics of society, before being able to specify the effects of technology" (p.30).

[154] While arguing that the interpretivist supports a measure of impartiality by re-emphasizing the essential indefiniteness of the attributes of technology (i.e. interpretive flexibility) Woolgar accepts, however, that the interpretivist position still retains a privileged position for the analyst's on texts (p. 41).

It also provides legitimacy and authority to exercise political power within the target constituency within which the narrative is held valid. The narratives of "indigenous development" and "colonisation of Sinhalese" contained the potential of mobilising political activity within the Sinhalese and Tamil constituencies, respectively.

3.3 The AMDP and the Sinhala nation: a journey towards the past

Depending on how it is perceived and by whom, the AMDP seems to perform differing nationalistic functions in different settings, to different audiences. The table shows an attempt to formulate the nationalistic functions of the AMDP as informed by the five narratives described above. An attempt is also made to improve the understanding of these nationalist functions of the dominant texts (i.e. first three narratives) also by situating them against the corrective interpretations (i.e. the last two narratives).

The AMDP as ...	**Nationalistic function**
Narrative 1: A modern mega development project dressed up as an attempt to reclaim indigenous national culture	Rhetorical function: Restoration of the ancient 'national' culture Actual function: Strengthening material conditions of modernity and ensuring the political stability of the government within the Sinhala constituency
Narrative 2: An indigenous development project	Rhetorical function: Dry zone development based on a model of indigenous development Actual function: Legitimating colonisation of the dry zone predominantly by Sinhalese by portraying it not as a project biased towards the interests of the Sinhala nation, but as a key priority of the postcolonial Sri Lankan state
Narrative 3: A project to promote the image of Gamini Dissanayake	Rhetorical function: Agricultural development of the dry zone through provision of water for irrigation and industrial development through the generation of hydro electricity Actual function: Strengthening the stake of Minister Dissanayake in the political leadership of the Sinhala constituency

Narrative 4: A Sinhala colonisation project	Ensuring a strong Sinhala presence in the dry zone
Narrative 5: A project preventing industrialisation	Ensuring the political stability of the Sinhala elite within the Sinhala constituency by preventing the movement of the landless to cities and hence, industrialisation

3.3.1 Revival of a glorious past

How was this done? Interestingly, a common strategy is used in trying to meet the nationalistic functions of all three dominant texts and to generate consent for them within the Sinhala constituency. It was done by mobilising the imagination of the Sinhalese towards a romantic, glorious past using techniques such as the application of invented or imagined traditions or myths. The glorious past the AMDP was supposed to resurrect was the prosperous time of ancient Sinhala kingdoms in the dry zone, the leading civilisation with advanced irrigation and agricultural practices, where food was available in abundance and people - Sinhalese peasants, led simple, sustainable and righteous lives, defined by Buddhist values.

Engineering works that were considered as national icons provide cases where modern technological systems were used to facilitate such backward journeys by nations in search of a romantic past. The Gotthard Railway line through Alps opened in 1882, linking northern and southern Europe through Switzerland and is considered a great work of Swiss engineering that provided the means of unifying Swiss regions with their different languages and identities. It was successfully marketed as a travel experience through the country where Swiss democracy was first founded in the thirteenth century (Elsasser 2009). While remaining one of the national symbols of the modern Portuguese state, the Port of Lisbon which was constructed during the second part of the nineteenth century, was clearly positioned in the Portuguese nationalist narrative as an effort to resurrect the ancient glory of Portuguese sailors of previous generations. The nineteenth century text of Lisbon Port described Portuguese as descendents of those glorious sailors, capable of transporting language and civilisation to Asia and America, with the suggestion that they deserved to re-colonise the portion of land from the Atlantic to Indian Ocean, once again (Saraiva 2007, pp. 268-69).

Attempts have also been made to ground space exploration - a symbol of membership in an elite club of technologically advanced super powers - in culture and in the past. The text of Soviet space travel, while claiming the status of a leading spacefaring nation, roots its origins in Russian culture, particularly in the philosophy of Cosmism, the intellectual foundation of which can be situated in "Eastern and Western philosophical traditions, theosophy, Pan-Slavism and Russian Orthodox thinking" (Siddiqi 2010, p.432). According to Siddiqi, this is also the case with Chinese and Indian space travel where commentators locate their own narratives in indigenous scientific and technological achievements. While the Chinese narrative refers to China as the birthplace of rocketry in the pre-modern world, Vedic Sanskrit texts feature prominently in Indian narrative which were shown as evidences of the glorious past of Indian space travel (p. 434).

A closer look at the literature on modern technological icons of nations, however, shows other examples which share broader similarities with the text of the AMDP. Canal du Midi, the seventeenth century French infrastructure project of "enormous scale and ambition", was a symbol of French nationalism that aimed to make France an empire in the image of ancient Rome. As a modern engineering project chasing the glory of the past, the text of the Canal du Midi shares a few common features with the text of the AMDP. Like the AMDP, it was a water engineering project. The opening ceremony conducted in the fall of 1667, was designed to recreate the empire of ancient Rome, reminding one of the rituals of development conducted at the site of the AMDP, as mentioned in narrative 1. As the text goes, the canal was decorated as an arena such as those of the ancients, where nobles and peasants assembled to bless and inaugurate the start of New Rome (Mukerji 2009, pp. 15-17, 25). The survival strategy used by the narrative on the Canal du Midi when it was proved to be an expensive technical and monetary burden on the state, can also be assumed to be somewhat similar. As can be argued in the case of the AMDP, propaganda on the Canal made it a great political asset in the public imagination, overshadowing critiques by opponents. The narrative was constructed in such a way as to turn the waterway into a public marvel and those who were involved with building it, into heroes (pp. 27-28). Literature also shows how engineering works that were created using foreign technologies, foreign resources and foreign funds were still used as symbols of nations to mobilise nationalism by grounding them in a narrative of a glorious past. The Cilegon steel plant and the Palapa satellite, technological systems that were made into national icons of Indonesia during the second half of the twentieth century, provide two such examples. The Cilegon steel plant was initially constructed as a Sukarno-era Soviet aided project and finalised in Suharto's New Order as a key a business venture of the Indonesian oil giant Pertamina in partnership with several German companies such as Siemen's Kloeckner and Ferrostaal. It was portrayed

both as a departure from the century-old agrarian life as well as a journey to the prosperous past. By naming the plant Trikora, Sukarno was said to have symbolically tied the postcolonial technological project to narratives of the unity of the Indonesian nation and the national struggle for the return of West Irian, the western part of the islands of Papua New Guinea. It was, however, the selection of the town Cilegon as the site for the plant that provided the passage for the journey towards the glorious past. Cilegon was a small, rural and impoverished town by the mid twentieth century, which had been a wealthy part of the Majapahit Empire (Moon 2009, pp. 263-64). The Cilegon steel plant, a project for which "raw materials, expertise and to some extent even labour largely came from elsewhere and the product was also marketed elsewhere", hence became the symbol of the revival of pre-colonial greatness (p. 274).

In the list of technological icons that mobilised ethno nationalism, the Palapa satellite provides, in my opinion, the next closest example to the AMDP. Making full use of the rituals of development to mediate differences between a modern national future and a traditional past, the narrative of the Palapa satellite showcases how the challenge of Palapa being an artefact of an alien country was neutralised to elevate it to the status of national icon. The Palapa satellite system was launched in 1976 - the first of its kind in the developing world. The linking of high technology with Javanese cultural tradition was reinforced at the inauguration ceremony, according to Barker (2005) when President Suharto symbolically switched on the satellite using a remote control button embedded among seventeen jewels (representing the date of independence) in a replica of a Javanese ceremonial dagger. The national significance of the launch was further reinforced when three ceremonial phone calls were made by the President to regions situated at the most distant points in the archipelago nation representing territorial unity of the state. This compares very interestingly with the *jala puja* ritual where water collected from the newly commissioned Kotmale reservoir was sent in four directions, north, south, east and west to destinations, according to Tennekoon (1988), that demarcated the parameters of a shrinking Sinhala Buddhist state (p. 299). The Palapa satellite launch celebrations continued till evening and included a cultural performance dramatising Gajah Mada's fourteenth century proclamation (Barker 2005, pp. 70-07). The accusation that might have been made by the nationalist lobby for relying on foreign technologies is said to have been neutralised by an organised campaign among university students based on the argument that, "once we are clever we can make a satellite, now we buy" (p. 715). If revival of the past glory of the Sinhala nation was a key feature of the AMDP or perhaps the central feature as was suggested by the dominant narratives of the Project, Barnes Wallis's designs for swing-wing airplanes and merchant cargo-carrying submarines provide a similar scenario for England. Wallis, who has long been the most

famous British engineer of the twentieth century, denounced England's decline in a series of speeches and interviews from the 1950s to the 1970s and forwarded a programme for its redemption. Moving beyond rhetoric and attempting to materialise his ideology through technological systems, the designs of swing-wing aircrafts and submarines were introduced to counter US commercial and Soviet military threats and to envisage a "second Elizabethan Age" where England would remain at the heart of a strengthened British Commonwealth (Zaidi 2008, p. 63). For him, the engineers and scientists in this new Elizabethan Age represented the great captains and seamen from the days of Elizabeth I (p. 73).

The national pasts which these modern technological icons were instrumental in reviving have several important features. As shown by the discussion above, they were times of major achievements that made the membership of nations proud. They were also happy times where things worked smoothly and perfectly among humans as well as between humans and nature. This nostalgia for an ideal past where things were better than the present, an image of the past constructed at present, is the focus of attention of the discussion by Oosterhout (2008) on technological romanticism and the revival of colonial water tanks in Java, Indonesia. It was the nostalgic notion of colonial *waduk*, an open-surface water tank irrigation technology used in the colonial era in eastern and central Java, that has led local farmers of western Java, who have no previous experience of the technology, to introduce them during recent times as a better solution to the issues of water distribution. Even though *waduk* was built by colonials to help cope with serious disputes between indigenous farmers and European sugar planters failed in its mission, for contemporary Indonesians, "the colonial technology embodies fairness because it is from "the good old days" when things, they imagine, were just and stable" (p. 702). Farmers of west Java "contrast their present lived experience of material and moral erosion to the colonial period when, they claim, water was divided in a just manner and abuse was noticed and punished" (p. 719). In the same way that the ancient hydraulic civilisation based on fixed allocation of land was a misconception and a colonial construct within the context of the AMDP as Pfaffenberger has argued, the west Javanese *waduk* of the late twentieth century is a postcolonial construct, according to Oosterhout. Unlike the colonial version, "the new *waduks* no longer referred to tanks, but rather to large lakes that often required the resettlement of entire villages" (pp. 715-16). Though positioned in a nostalgic discourse of pre-colonial and colonial heritage that is said to benefit the population of small scale farmers, the "new *waduks* have no local irrigation function at all; instead, they are connected to supra-regional water-management plans that benefit the urban population and more distant farmers" (p. 717). The wistful affection for the romantic past of the Sinhala nation, a past that emerged and evolved in the valleys of Mahaweli, was best documented elsewhere in the *Mahaweli Vansaya*, the Chronicle of Mahaweli that

was authored as a part of the AMDP[155]. In comparison to its importance as a serious recent attempt to document history with the involvement of a large team of authors, the *Mahaweli Vansaya*, the two volume Sinhala language publication, has not received adequate scholarly attention, so far[156].

3.3.2 The Mahaweli Vansaya (The Chronicle of Mahaweli): Mahaweli Valley as a nostalgic site

Following the tradition of pre-modern kinship of documenting historically important events, objects and people in the form of chronicles such as the *Dipavamsa, Mahavamsa, Thupavamsa, Boodhivamsa, Elu Aththanagalu Vamsa, Kesha Dathu Vamsa, Lalata Vamsa*, etc., the decision to launch the *Mahaweli Vansaya*, a historical record of the River Mahaweli and the great civilisation that evolved around it, was taken in December 1981 at a meeting headed by the Minister of Lands, Land Development and Mahaweli Development (Ekanayake 1984; 1985). While Minister Dissanayake was the chair, W. J. M. Lokubandara, the Minister of Indigenous Medicine and a prominent member of the *Hela Havula* Movement, led the discussion. The project of writing it was initiated with an inauguration ceremony held at the Ministry on the 15th of January 1982, and the two-volume *Mahaweli Vansaya* traces a lengthy time span, from pre-historic times to the commissioning of the AMDP[157].

The team of authors included academics, civil servants, engineers, broadcasters, artists, ayurvedic doctors and scientists. Historians, archaeologists, experts in Sinhala and Pali languages and sociologists

[155] The idea to write a chronicle on Mahaweli seems to have been conceived within the government after construction work of the AMDP began a few years back. According to the preface to Volumn I, *Mahaweli Vansaya* the initial discussion to author a chronicle was held in December 1981, while construction of the Maduru Oya, Kothmale and Victoria reservoirs was already underway.

[156] Hennayake (2006) refers to "Mahaweli Saga", a text which can perhaps be seen as a strictly condensed version of *Mahaweli Vansaya*, three of the four authors of which were among the sixty-author editorial board of the Mahaweli Chronicle (pp. 108-111).

[157] *Mahaweli Vansaya* Volume I, with a total of fourteen chapters, introduces in its first three chapters the geographical, geological and environmental features of the River Mahaweli. The fourth chapter with the title "Mahaweli and the Heartland of the Sinhala Nation" describes the Mahaweli Valley as the birthplace and the main land of Sinhala civilisation. With a description of pre-historical context as the backdrop in chapter five, chapter six traces the historical emergence and the decline of the Mahaweli region, probably as a preface to the renaissance introduced by the AMDP. Chapters seven and eight deal with a discussion of the last Kingdom in Kandy and the subsequent rule by the colonials, especially the British. The process of introducing Buddhism to the island and the religion's influence in social life are described from chapter nine to eleven. Archaeological ruins in the Mahaweli Velley are introduced in the twelfth chapter and the thirteenth is a discussion of ancient Sri Lankan economy and trade. The fourteenth is on plantation agriculture introduced by the colonial powers. Volume II of the *Mahaweli Vansaya*, with ten more chapters, is dedicated to demonstrating that the Mahaweli Valley is historically the land of Sinhalese by discussing the different aspect of the lives of Sinhalese in the Mahaweli land. The first three chapters of Volume II (from chapter fifteen to chapter seventeen) illustrate the Sinhala village and its social organisation depicting the day-today lives of Sinhala peasants in the dry zone. Chapters eighteen to twenty are reserved for a discussion on Sinhala language, folk literature, arts and crafts of the Mahaweli Valley. In chapters twenty one and two, one finds a sketch of the nature of industries and agricultural practices in ancient Sri Lanka. Chapter twenty three is a discussion on traditional knowledge. A discussion on all other ethnic groups can be found in the final, twenty fourth chapter (Ekanayake 1984; 1985).

played a prominent role in constructing the particularly Sinhala narrative of the *Mahaweli Vansaya*[158]. Though written by a large team of authors, the *Mahaweli Vansaya* is fairly consistent in the message it communicates. By reminding the reader that the island belongs to the Sinhalese, a nation that is strongly influenced by Buddhism and which was instrumental in building a great hydraulic civilisation, the *Mahaweli Vansaya* constructs the narrative of the Mahaweli land as the heartland of Sinhala civilisation. The *Mahaweli Vansaya* constructs a nostalgic view of the Sinhala past. All seems to be smooth on almost all fronts; the status of technology used, Sinhalese claims for the island, the relationship between the state, society and Buddhism and the nature of the peasant community.

The *Mahaweli Vansaya* talks about the advanced status of technology in the Mahaweli Valley. The Chapter on "River Network and Water Resources" introduces the network of tributaries of the River Mahaweli and then moves on to explain details of the advanced technical and management aspects of irrigation systems. The system was designed to work well. However, as is the case with popular narrative of Sri Lankan engineering discussed in Chapter 1, the entire credit for this advanced status of affairs is casually given to Sinhalese without taking on the burden of establishing the connection[159]. The Sinhalese occupy a special place in world history as a result of this achievement, says the *Mahaweli Vansaya*, arguing the case of Sri Lankan tank-based irrigation network as the only ancient technical invention in the world that is still functional (Vitharana 1984, p.37-44).

[158] T. B. M. Abayasinghe (Professor of Modern History, University of Colombo), Pandula Andagama (Head, Human Sciences, National Museum), Sirima Kiribamune (Associate Professor, University of Peradeniya), Ananda Kulasooriya (Professor of the Department of Sinhala and the Dean of the Faculty of Arts, University of Peradeniya), Sirisena Gamage (Assistant Lecturer, Dept. of Sociology, University of Peradeniya), P. V. J. Jayasekara (Senior Lecturer, Dept. of History, University of Peradeniya), J. B. Dissanayake (Professor of Sinhala, University of Colombo), Shiran Deraniyagala (Deputy Director of Human Sciences), Rev. Yatagama Dammapala (Senior Lecturer, Dept. of Pali, University of Peradeniya), Rev. Warakawe Dammaloka (Senior Lecturer, Dept. of Sinhala, University of Peradeniya), K. N. O. Dharmadasa (Associate Professor of Sinhala, University of Peradeniya), Chandrasiri Palliaguru (Senior Lecturer, Dept. of Sinhala, Vidyalankara University), P. B. Meegaskumbura (Associate Professor of Sinhala, University of Peradeniya), Nandasena Mudiyanse (Professor of Sinhala and the Dean of the Faculty of Arts, Vidyalankara University), Sirimal Ranawella (Professor of History, University of Ruhuna), R. M. B. S. Rajakaruna (Lecturer, Dept. of Sociology, University of Peradeniya), Amaradasa Liyanagamage (Professor of History, Dean Faculty of Social Sciences, Vidyalankara University), Rev. Horana Vajiragnana (Academic administrator, Dept. of Sinhala, Buddhist and Pali University), Rev. Kamburupitiye Vanarathana (Former lecturer, Dept. of Archeology, Vidyodaya University), Anura Wickremasinghe (Lecturer, Dept. of Sinhala, University of Colombo), Vinie Vitharana (Professor of Sinhala, University of Ruhuna), Rev. Deradeniye Wimalakerthi (Lecturer, Pali and Buddhist University), S. G. Samarasinghe (Language Commissioner), M. U. De Silva (Senior Lecturer, Dept. of History, University of Ruhuna), K. M. De Silva (Professor of History, University of Peradeniya), Rev Ellawala Medananda (Former Lecturer, Vidyodaya University and Thilak Hettiarachchi (Senior Lecturer, Dept. of Sociology, University of Colombo).

[159] One of the rare places the general argument of the *Mahaweli Vansaya* gets violated is in the discussion on the art and craft of the island which are said to be extensively influenced by Indian art and craft. In the same way "water of a reservoir gets refreshed by water streams coming from outside, a nation too gets fresh blood as a result of conflicts with foreigners", says the *Mahaweli Vansaya*. It continues to argue, however, that the Sinhalese art and craft too found their own path of evolution after their arrival in the island 2500 years ago (Mudiyanse 1984b, pp. 320-322).

The *Mahaweli Vansaya* constructs a case to justify the Sinhalese claim of the entire island. By taking an uncritical approach, it simply identifies the entire territory of the land of the island as the land of Sinhalese. While Mahaweli land is seen as the heartland of the Sinhalese, the entire island is viewed as "Three Sinhalaya" (three kingdoms of the Sinhalese), the land of the descendants of the Aryans. The Chapter on "Mahaweli and the Heartland of the Sinhala Nation" introduces the concept of a heartland in relation to the land of the Sinhalese. Mahaweli land is said to have provided protection to the Sinhala nation till the very end, till the entire island came under British rule in 1815. The map of the heartland, illustrated in the chapter overlaps almost entirely with the map of the Mahaweli Valley and the map of land to be irrigated by the AMDP (Madduma Bandara 1984, pp.45, 47). Referring to the fourteenth century *Kadaim Potha*, the *Mahaweli Vansaya* identifies the whole country to be divided into three Sinhala kingdoms, *Maya* (with twenty eight sub kingdoms), *Pihiti* (with forty four sub kingdoms) and *Ruhunu* (with forty eight sub kingdoms). The sub kingdoms under the rule of Tamils such as the sub kingdom of Jaffna, Maravvirata, etc. were also placed within the "Three Sinhalaya" (Abewardena 1985, pp. 335-336). The *Mahaweli Vansaya* always classifies villages in the island as Sinhala villages, even when the names of the villages were in Pali or Tamil. This classification is based on the argument that the Pali and Tamil languages have influenced the names of Sinhala villages located on both sides of the Mahaweli river, indicating that the villages were originally Sinhala even though they have for example, Tamil names such as "malei" or "kulam" at the end, to sound Tamil (Dissanayake 1985a, p. 352). All cities in the Mahaweli Valley are classified as Sinhala cities (Mudiyanse 1985, p.353). The emergence of settlements and the formation and the expansion of the Lankan state are narrated as a chronologically-ordered story of Sinhala kings (Hettiarachchi 1984, pp.65-69; Ranawella 1984, pp.69-83). The *Mahaweli Vansaya* though defined as a chronicle on the Mahaweli Valley, a region within which the presence of Tamil speaking people was historically observed as in the case of narrative 4 above, takes the easy way out, avoids complications and allocates just one chapter of its twenty four chapters: “Special Ethnic Groups”, for a discussion on other ethnic communities. Under “Special Ethnic Groups” there are separate sections for the *Veddas*, *Wanni* Sinhalese, *Kinnaras*, *Rodis* and *Ahikuntikas*, the small ethnic groups that attracted the attention of anthropologists in the second half of the twentieth century. A discussion on "Other Ethnic Groups" comes at the end of this single chapter, where brief references are made to Tamils and Muslims in a few paragraphs[160] (Meegaskumbura 1985, pp. 623-625).

[160] While stating that the Tamils existed in the island for a long time, this section identifies the factors that allowed the Tamils to establish their power base in the North; the continuous flow of immigrants from South India; internal conflicts among the Sinhalese; and the weakening of the overall power of the ruling Sinhalese kings. The section also provides a description of the

> "As this [chapter] is on other nations, it suits that [we] add a brief section on Tamils and Muslims. It also suits because there are those among Tamil castes and tribes who were mixed with Sinhalese" (Meegaskumbura 1985, p.624)

The *Mahaweli Vansaya* establishes a harmonious relationship between Buddhism and all kinds of human activity. The chapters on the "Arrival of Buddhism and its Spread" and "Buddhist Religion in Sri Lanka" describe in detail how Buddhism was brought to the island by Arhat Mahinda, how Buddhism was institutionalised as Mahavihara, Abhayagiri and Jethavana, etc.[161], how Mahavihara became the mainstream Buddhist school and how Buddhist literature in the form of commentaries were translated from Pali to Sinhala. The two chapters establish the link between the Lankan state and Buddhism since the time Buddhism first arrived in the island. Buddhism became the religion of the state, the King became the guardian of Buddhism, the Bikkus the care takers of Buddhism and the people became the main disciples of the temple (Vajiragnana 1984 and Dhammapala 1984, pp175-190). The chapters on literature, education, architecture and arts and crafts were drafted with the objective of highlighting the central role Buddhism has played in the evolution of these fields. The signature of Buddhism is said to be present in all forms of literature - from folklore to Hela commentaries, chronicles, biographies, poetry and stories of history[162] (Kulasooriya 1984, pp. 193-205). The *Mahaweli Vansaya* describes Buddhist education provided at Mahavihara and Abhayagiri schools as the early forms of organised education. Mahavhara's superiority in the teaching of the Buddhist text and the code of conduct in Buddhist practice and the prestige of Abhayagiri in teaching the sciences, arts and crafts are especially highlighted[163] (Herath 1984, pp. 205-217). Describing the major works of Buddhist architecture such as pagodas, temples, *vatadages* (structures built around pagodas) and *pilimages* (the building that hosts Buddha statues), a relationship is built between Sinhala architecture and Buddhist architecture (Mudiyanse 1984a, pp. 217-220).

The nostalgic notion of the past that is said to continue undisturbed in the rural Mahaweli Valley, is however, best showcased in the descriptions of the lives of Sinhala peasants. They lead uncomplicated

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caste structure in Tamil society. Muslims on the other hand, are thought to have arrived in the island straight from Arabia, South India or from Malaysia. It further explains how one group of Muslims was absorbed into Sinhala culture while another group absorbed the Tamil language and Tamil culture (Meegaskumbura 1985, pp. 623-625).

[161] Mahavihara, Abhayagiri and Jethavana were the three main Buddhist fraternities of the island, with differing influences from the Theravada and Mahayana traditions.

[162] The earliest form of written literature were the commentaries documented in Sinhala/Hela language to clarify the Dhamma and the code of discipline of Buddhism which arrived in the island with the arrival of Arhat Mahinda and his team of missionaries. The presence of a heavy Buddhist influence is also a hallmark of chronicle literature (Kulasooriya 1984, pp. 193-205).

[163] Interestingly the other schools of Buddhism that were also practiced to a lesser scale were identified in the *Mahaweli Vansaya* as *mithyadharma*, or false doctrines (Herath 1984, pp. 205-217).

and simple lives. According to this romantic notion, as reflected in the section on "Paddy Cultivation", the Mahaweli farmer is seen as a person who has inherited a set of ethics moulded by Buddhism (Dissanayake 1985b, p. 569). Children, and girls in particular, are reared from childhood as devotees of the religion (Dhammaloka 1985, pp.388-394). Love for humankind, an ability to co-exist, a desire for equality, thankfulness, respect and aesthetic sensitivity are seen as the main components of these ethics (Dissanayake 1985b, p. 569). The section on the "Ways of Morality" extends this to the community of peasants, the village, and portrays an ideal notion of a typical Sinhala village in the Mahaweli region. It provides a detailed description of a religiously disciplined village where things happen according to a well-managed plan. Accordingly, people of the Mahaweli Valley live away from the bad influences of contemporary urban culture. The traditional village in the region is said to be a self-sufficient unit, to a great extent. Morality, according to this narrative plays an important role in the lives of Mahaweli peasants. The foundation of the morality of the family is seen as the special relationship between the father and the mother who have well defined positions in the family setup[164] (Dhammaloka 1985, pp.388-394). This uncomplicated nature is said to be reflected in peasant's dress as well. According to the *Mahaweli Vansaya,* the men's attire is simple and convenient to perform work while the women's attire is simple and attractive (Ibid).

The *Mahaweli Vansaya* uses a few strategies to construct this nostalgic narrative of the past and the rural lives of Sinhala peasants. It builds an uncritical relationship between the Mahaweli civilisation and the Sinhala nation. By leaving out the regional, ethnic and cultural diversity of the social fabric of the Mahaweli Valley, it constructs a romantic notion of a particular homogeneous peasant life that is portrayed as the uncomplicated life of a peasant in a self-sufficient Sinhala village. The near absence of certain groups in the narrative allows the *Mahaweli Vansaya* to achieve its goal of reclaiming the Sinhala

[164] The narrative describes this relationship in detail. The father occupies a prestigious position within the family and commands love and respectful obedience from its members. In all affairs decision-making is considered the responsibility of the father. The mother in the meantime helps the father in implementing the decisions taken by him. While extending loving respect towards her husband, the wife never behaves as an equal to him in public. One indication of this respect is refraining from sitting at the same level as her husband. She never argues and extends her consent to decisions taken by her husband. As a housewife it is her responsibility to engage in house work. The sexual and romantic lives of the parents are hidden from their children. A common sight in a village is to see the mother walks a few steps behind the father. The woman is used to carry all weight, including bags and children. The narrative identifies this as a model relationship where gender roles are clearly defined, and describes the relationship in detail (Dhammaloka 1985, pp. 388-394).

heartland, without much difficulty. The invisibility of Tamil and Muslim communities prevents the complications they could have brought with them[165].

3.4 The AMDP and the Sinhala nation: dealing with the 'other'

Facilitated by technology, nations tend to visualise their common futures or shared pasts. This visualisation helps to bring and keep the membership of nations together as imagined communities. While the Hydro Electric Scheme discussed in Chapter 2 was instrumental in imagining an industrially advanced modern Ceylonese nation, the AMDP, as discussed so far, remobilised Sinhala nationalism by reviving nostalgic memories of a common glorious past. Is this gaze towards the future or the past along the time axis the only way a nation can be built and maintained? A relational approach in identity formation provides another arena to discuss how a nation is in operation. Rather than looking at time, it looks at space - at self not in relation to time, but in relation to 'others'.

The demarcation of boundaries of ethnic and racial groups is a long-standing debate (Chai 1996, p. 281). It can be traced back at least to the works of Carl Schmitt and Fredrik Barth. In his famous work, "The Concept of the Political" Schmitt (1932) introduced the categories of 'friends' and 'enemies' at work in defining the political identity of a group (Schmitt et al 2007[1932]). The idea of 'other', however, was clearly articulated by Fredrik Barth in 1969, when he argued that the identity of a community is defined in opposition to the perceived identity of other racial and ethnic groups (Lamont and Molnar 2002, p. 174). The role played by the 'other' is considered more fundamental in defining the identity of a community than its shared culture. Whether the argument that was forwarded in relation to a racial or an ethnic group is also valid to describe a nation, can be a matter for debate when taking into consideration the differences between the two communities. An ethnic group with no evolved interest for its own territory or a state is contrasted with a nation which demands command over a territory or a state. For Connor (1994), ethnicity represents a step in the process of nation-formation (p. 102). As a result, "while an ethnic group may [...] be other-defined, the nation must be self-defined", according to

[165] In the six hundred and forty seven page chronicle, Sri Lankan Tamils and Muslims appear as communities co-sharing the land in one and half pages at the very end. The narrative of the *Mahaweli Vansaya* does not engage with the results of the survey conducted as a part of the chronicle writing project. The survey indicates to demographic changes occurring most probably as a result of the mass scale colonisation by the Sinhalese. The sample survey conducted to look at the changes in the social organisation of traditional villages caused by the Accelerated Mahaweli Scheme shows major changes in village ethnic composition. The percentage of Sinhalese living in Millewa in Polonnaruwa in System B, has increased from 42 to 69, from 1970 to 1980. The percentage of Tamils in the village has dropped from 23 to 2, in parallel. Drastic changes in the communities of different religious faith can also be seen. The population of Sinhala Buddhists increased from 73 percent in 1970, to 98 percent in 1980. The Tamil Buddhists' population of 11 percent in 1970, dropped to 0 percent by 1980. The Sinhala Hindus of 4 percent in 1970 also vanished by 1980. The Tamil Hindu population also dropped from 12 percent in 1970, to 2 percent in 1980 (Rajakaruna 1985, pp. 366-369).

Connor (p. 103). For Calhoun (1993), "while it is impossible to dissociate nationalism entirely from ethnicity, it is equally impossible to explain it simply as a continuation of ethnicity or a simple reflection of common history or language" (p. 211). However, the role of other, or an enemy or an external threat, in shaping a nation and mobilising nationalism remains the focus of many investigations conducted during the last few decades (e.g. Armstrong 1982; Kosterman and Feshback 1989; Schopflin 1990; Bruckmuller 1993; Eriksen 1993; Alonso 1994; Parekh 1994; Duara 1996; Pieterse 1997; Young 1997; Finlayson 1998; Taras 1998; Nieguth 1999; Kuzio 2001; Wimmer 2002; Salame 2004; Gol 2005; Bonikowski 2016). For Calhoun (1993) himself, "nationalism is not simply a claim of ethnic similarity, but a claim that certain similarities should count as the definition of political community" and, hence, opening up space to define nation, not just on the basis of internal similarities of the membership, but differences to others (p. 229). The two cases I'm going to look at below, "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and "North Central Province Canal", seem to highlight Sinhala nationalism in action more in relation to the Tamil other, adding new ground to extend the discussion conducted so far.

The rhetoric of othering which separates us from them and creates in-groups and out-groups is at the centre of national mobilisation over history, from the definition and redefinition of identity of the English (with the Scots, Irish and Welsh as others), the Nazis (regarding the rest as others) to Americans in recent times from George W. Bush to the Trump administration (with evil and Islamic terrorism as the other)[166]. Referring to the degree of otherness in identity management in the process of nation building in Serbia, Petrovic (2008) introduces the two terms: 'undeniable other' and 'less other'[167] (p. 67). In the context of the AMDP, the Tamil seems undeniably the ‘undeniable other’.

[166] Levinger's and Lytle's (2001) thesis on triadic structure of nationalist rhetoric offer a tool to explain how those who stay outside of the boundary of a nation could trigger a nation to act. According to Levinger and Lytle all rhetoric of national mobilisation contains three juxtaposed elements; a glorious past, a degraded present and an utopian future. This triad, they argue, function as a highly effective rhetorical strategy for mobilisation, inviting nations to proceed from the realm of political imagination to the realm of action (p. 178). The role of other in the equation becomes visible when Levinger and Lytle identifies three interlocking elements (i.e. tension, diagnosis and prescription) that link myths (i.e. glorious past, degraded present and utopian future) and action. Tension between the mythical past and the present is diagnosed by them as caused by the other, internal and external agents. Degradation at present in the form of loss of territory, loss of linguistic and racial purity, moral decline, etc. is prescribed with remedial action (p. 186). Even though Levinger's and Lytle's triad has limitations and cannot be held valid as an instrument to describe developmental nationalism where the imagination of a developed nation often marks a clear break from the past, it seems to provide a logic to discuss ethno nationalism where the nostalgic past is lost as a result of threats to the nation by an enemy, the other. Prescription, corrective collective action, is to invert the diagnosis through struggle. Referring to literature on mobilisation and collective action in relation to nationalism, Levinger and Lytle identify two categories of approaches to discuss action; instrumentalist and constructivist. While the instrumentalist approach emphasises structural and institutional factors, the constructivist approach focuses on the construction of meaning and the formation of political identities (p. 187). Dealing with other plays a key role under both categories.

[167] She refers to Albanians as the 'undeniable other' and to other Muslims as the 'less other'.

3.4.1 Case 1: Yaan Oya - Malwathu Oya - Maduru Oya Operation: destroying the basis of Eelam[168]

The relationship between the nation and the other is fundamentally dichotomic. While, on the one hand, the nation is defined by the other and hence loses its significance in the other's absence, one of the main functions of the nation, on the other hand, is to eliminate the other. If the interest in looking at one's own self - at a perceived past or imagined future - becomes helpful in describing certain actions of the nation, the preoccupation of the nation with the other - threats and enemies - sheds more light in explaining certain other actions. The "Yaan Oya - Malwathu Oya - Madhuru Oya Operation", is a title given by me, to an unsuccessful attempt by a small group of high officials, engineers and politicians to alter the technical map of the AMDP, with the aim of breaching the continuity of the Eelam land, the territory the minority Tamil community considered their traditional homeland and the independent state for which Tamil militants fought for over three decades. Details of this important operation hardly appear in scholarly literature and when it does appear, it is just a brief reference describing it as a failed attempt of mass scale encroachment by the Sinhalese in the AMDP land in Maduru Oya, the first phase of the overall operation[169]. The mainstream print media, both Sinhala and English, avoided reporting details of this exercise that took place in 1983. Full details of this operation, however, can only be found in two publications by one of the architects of this attempt, Herman Malinga Gunaratne. The book, "For a Sovereign State" first published in 1988, and the newspaper article that appeared in *The Sunday Times* on 26th August 1990 with the title "Destroying the basis of Eelam", provide Gunaratne's version of events that were initiated at secret discussions among Mahaweli officials in April 1983 and ended up by the end of 1983 with Gunaratne and forty others attached to Mahaweli related institutions being interdicted, questioned or detained for mounting a secret operation. Gunaratne's narrative was confirmed by former officials of CECB whom I interviewed during the course of my fieldwork (Informant 8 and 9). According to these sources, most of the people who were interdicted were Public Relation Officers of the AMDP. This episode, most probably an embarrassment to the Sinhala constituency, was however mentioned in several publications and reports by organisations and groups campaigning for Tamil rights[170]. The best description, a Tamil perspective, can be found in the 22nd Chapter of the e-book, "Pirapaharan" written under the title "JR's Third Track" by the journalist T. Sabaratnam (2004). The

[168] Details of this operation are also discussed under the Section 3.5, Engineers.

[169] Peebles (1990) observed that "more importantly, encroachment in the Maduru Oya region of the Mahaweli programme reportedly were encouraged by Gamini Dissanayake, Minister of Mahaweli Development, and N. G. P. Panditaratne, Chairman of the Mahaweli Board (p.45).

[170] See for example, International Crisis Group (2008, p. 4); International Human Rights Association, Bremen (2013, pp. 17-18), UTHR(J) (1993b).

exercise to settle Sinhalese mass scale on the West bank of the Maduruoya that was reported in Tamil language publications, was just a part of a grand plan developed in mid 1983, to challenge the basis of Eelam as a continuous stretch of homeland of Tamils along the upper coastal belt of the island. The aim was to deviate from the original map of the AMDP and to breach the continuity of Eelam land at three points by creating additional settlements of Sinhalese, initially in Yaan Oya basin (i.e. System M of the Master Plan that was not incorporated in the AMDP), and then in Malwathu Oya (i.e. System I of the Master Plan that was not incorporated in the AMDP but named as a part of the buffer zone of the AMDP) and Maduru Oya (i.e. System B of the AMDP) (see *Map 1*). While the Yaan Oya settlement was designed to violate the continuity between the adjoining Trincomalee and Mullaitivu districts and the Malwathu Oya settlement, the connection between Mannar and Puttlam districts, Maduru Oya settlement was expected to separate the adjoining districts of Batticaloa to Trincomalee. Trincomalee, the coastal town where the River Mahaweli reaches the sea, a place of strategic importance to Eelam, was also proposed to be developed as a metropolis so that the city would lose its relevance in the political map of Eelam[171]. It was also suggested that some of the excess waters of Mahaweli be diverted to Yaan Oya as a part of the settlement plan to facilitate a convenient life for the new settlers. Similar plans were devised for settling Sinhalese on the banks of Malwathu-oya as well (Gunaratne 1990; 2009[1988]).

However, the accidental meeting in mid August between Gunaratne and the leading Sinhala nationalist monk, Dimbulagala Seelalankara, from the Eastern Province resulted in changing priorities. Seelalankara offered himself to lead the settlement of Sinhalese immediately in Maduru Oya, the last priority in the original plan. This deviation upset the original plan. According to Gunaratne, the process of settlement started on the 1st September 1983 and ended in few days as a mass movement of around 45,000 Sinhalese. For Anthonimuttu, the Government Agent (GA) of Batticaloa district, 40,000 Sinhalese had occupied the West Bank of Maduru Oya by mid September 1983. The entire process was a public spectacle[172]. The episode attracted angry responses from the Tamil side and particularly from

[171] This included the proposals to develop Trincomalee harbour as a ship-building yard and the airport as a domestic transport hub and to declare the entire area a free trade zone. Establishment of a naval academy was also a part of the grand plan (Gunaratne 2009[1988]).

[172] Seelalankara placed an advertisement in the Sinhala language *Riviresa* newspaper on the 14th August 1983 appealing to youth to apply for land distributed freely. The applicants were asked to appear personally or send application in writing accompanied by a certificate from the government official of the village. Circulars were sent to the chief priests of temples to send at least two landless peasant families. On 1st September Seelalankara led an army of settlers to Maduru Oya in a convoy of around two hundred vehicles. He is said to have headed the convoy in a vehicle equipped with a Buddhist flag and a loud speaker chanting 'Seth Pirith' (Gunaratne 2009[1988]).

Anthonimuttu[173], the Minister of Home Affairs, K. W. Devanayagam[174] and the leadership of the Tamil United Liberation Front[175]. Attempts were made using local groups to legitimise encroachment[176]. Sinhala and English mainstream media tried their best to make counter claims and to divert attention to the colonisation of land by the Tamils, especially to the settlement of Indian Tamils in the Wanni[177]. Under pressure from India and the international community, President Jayawardene ordered the dismantling of unofficial settlements in the West Bank of Maduru Oya[178]. The Yaan Oya - Malwathu Oya - Madhuru Oya Operation that ended up as a failed attempt to breach the continuity of Eelam land was revived in 1984 with a new set of actors and a new set of objectives[179].

Leaving the task of discussing the role of engineers in the above case to be conducted in the next section, I would like to note here a few key features of the Operation. While multiple interpretations of

[173] Anthonimuttu reported details of the episode to Minister Dewanayagam and wrote to the President himself (Ibid).

[174] Dewanayagam conducted press conferences on the 8th September, 16th September and 18th October and challenged the government. On the 8th, Minister Devanayagam reported how landless peasants were being brought to Vadamunai in the Maduru Oya west bank that fell within his electorate. He circulated copies of the letter the GA had sent to the Ministry of Home Affairs which were copied to him, too (Sabaratnam 2004). In his second press conference Devanayagam warned of a confrontational situation in Batticaloa between the Tamils and the Sinhalese. He distributed photographs to prove the growth of settlements.

[175] The leadership of the Tamil United Liberation Front, the main democratic party representing the Tamils, were overseas at that time, and alerted the Indian Government and the Indian Prime Minister Indira Gandhi (Sabaratnam 2004).

[176] On 30th September 1983, the Sinhala daily *Davasa* published a news item about fifty families in Hathareskotuwa who would be given land in Dimbulagala of the Maduru Oya Scheme, upon responding to a request by the Hathareskotuwa Village Development Society.

[177] On 17th October 1983, the English Daily *Sun* under the headline "Stateless persons encouraged to encroach on state land in North and East" reported that "hordes of stateless persons of Indian origin are moving into settlements in what appears to be a highly organised exercise to form a human buffer zone enveloping the districts of Batticaloa and Jaffna". According to this report, 5000 families had been settled from July 1983 to 17th October 1983. On the 20th October *Sun* published a letter sent by Minister Devanayagam responding to the above report published on the 17th and responded with another article with the title "Encroachment syndrome blows a fuse: Deva's tirade against *Sun*: A mischievous twist". On 23rd October, the Sinhala weekly *Riviresa* published an article by the monk Madihe Panyaseeha with the title “Anavasara Padinchi Thahanama Sinhalayanta Pamanakda?”, proposing to evacuate both Indian and Sri Lankan Tamils from the North and the East who were settled through illegal means.

[178] President Jayawardene dispatched Minister Ranil Wickremasinghe to Maduru Oya for an independent report, sent Kaduwela MP and a District Minister Paul Perera to dismantle the settlement and ordered the arrest of key players involved. Gunaratne who was in hiding from the 21st October surrendered to the police on 28th October 1983. In early 1984 the detention order on Gunaratna was revoked and the case was consequently, dropped (Gunaratne 2009[1988]).

[179] The first phase of the operation was eventually replaced by a plan to arm and train Sinhalese villagers in the border villages in Padaviya, Trincomalee, Malwathu-oya and Tatirimale when the dust of the conspiracy had settled, in early 1984. This new round of discussions with the renewed objective started by the end December 1984 with a new set of actors that included Ravi Jayawardene (the son of President Jayawardene) and Devinda Senanayake (the grandson of Prime Minister D. S. Senanayake) with Gunaratne playing the role of facilitator, again. Learning lessons from the Maduru Oya episode, the initiative to arm Sinhalese peasants was conducted as a low-key operation. Ravi Jayawardene's involvement in training armed men also resulted in the formation of the Special Task Force which started its operations as a unit providing security for President Jayawardene, later becoming a specially trained unit of the police who were involved with military operations (Gunratne 1990; 2009[1988]). According to Sabaratnam (2004) the second phase of this overall plan, which was not discussed by Gunaratna in his book, was to redraw the provincial map of Sri Lanka to create five provinces out of the existing four. By redrawing the boundaries of the Northern, North Central, North Western and Eastern Provinces, suggestion was made, according to him, to create a fifth province that would be named the North Eastern Province consisting of the Polonnaruwa and Trincomalee Districts. This redrawing of boundaries, says Sabaratnam, would leave only the Northern Province as the Tamil majority province.

the AMDP had diverse objectives of achieving stability of the government within the Sinhala constituency (i.e. Narrative 1), legitimising the colonisation by the Sinhalese in the dry zone (i.e. Narrative 2) and strengthening the stake of Minister Dissanayake within the Sinhala South (i.e. Narrative 3) were constructed exclusively on a rhetorical platform of nostalgia for a glorious past, the Yaan Oya - Malwathu Oya - Madhuru Oya Operation, a technological intervention to modify the water distribution and settlement map, engages head on with the Tamil other. The rhetoric of a journey to the romantic Sinhala past didn't play a strategic role in mobilising the team of Sinhala officials, engineers and politicians to rally around the Operation. Countering the other and breaching the continuity of the Eelam land was a reason legitimate enough to mobilise nationalism among the members of the team. Connor's (1994, p. 103) argument that an ethnic group is other-defined while a nation is self-defined was less valid, in my opinion, particularly within the context that the sole claim by Sinhalese for the Sri Lankan state, the factor that elevates the Sinhala ethnic group to the status of a nation, was strongly contested by the separatist movement of Tamils at the time. Sinhalese was a nation with a mindset of an ethnic community, even if we consider the argument of Connor to be universally valid.

The second case I'm going to deal with, "North-Central Province Canal", seems to carry this argument further by highlighting an important dimension of othering, exclusion.

3.4.2 Case 2: North-Central Province Canal: exclusion of Tamils

The presence or the absence of North Central Province (NCP) Canal in the Mahaweli development map remains a central feature that decided what it Mahaweli development meant, from its inception up to date. The presence or the absence of the NCP Canal, the factor that also became a technical debate between the Sinhala and Tamil engineers, symbolised the presence or the absence of Tamils in the landscape of Mahaweli development. The NCP Canal, the canal that was supposed to take Mahaweli water from the Moragahakanda reservoir to the water scarce Tamil-dominant Northern Province through the Iranamadu Tank, can be considered an excellent case study that showcases the interdependence of the technical (technical features of a project), social (geographical spread and social aims) and political (individual, party and ethno-politics). The NCP Canal has also blurred the line dividing technical institution and the political establishment that are supposed to play two different roles according to conventional thought. As already stated, the NCP Canal and the Moragahakanda reservoir, key features of the Master Plan, the implementation of which were initiated by the United Front government in early 1970s, were dropped when the Jayawardene regime decided to accelerate the project. Irrespective of its absence from the AMDP map, the NCP Canal remained alive as a political

demand of the Tamil people. It also remained a slogan used by Sinhala politicians to canvas Tamil votes at platforms of presidential and general elections[180]. As a result, Moragahakanda reappeared in the Mahaweli development map as Moragahakanda - Kalu Ganga Multipurpose Development Project (MKMDP)[181] in January 2007, by bringing the NCP Canal and feeding the North with Mahaweli water back to the centre of debate. It has resulted in a tug-of-war over ownership of the project, between the previous Rajapakse regime and the current Sirisena regime[182], on the one hand, and renewal of claims for rights to Mahaweli water by the Tamil community, on the other. Since inauguration in 2007, the Moragahakanda scheme has undergone important changes under the ministerial leadership of Basil Rajapake, brother of the then President (Wijenayake 2015b). The changes in relation to the status of the NCP Canal are relevant to this discussion. According this new plan, the MKMDP is to be implemented in three phases over a long stretch of time: from 2015 to 2032; Phase I (2015-2024), Phase II (2024-2027) and Phase III (2028-2032). Contrary to the original understanding reflected in the Master Plan, which was the general understanding even by 2007, that the Moragahakanda reservoir is about the NCP canal (which aims to provide water to the North Central Province and most importantly to the Tamil dominated Northern Province), Phase I of the MKMDP that will be implemented during 2015 - 2024, does not include the NCP Canal in its plan of activities. According to this new scheme the NCP Canal is expected to be constructed during Phase II and Phase III, from 2024 to 2032. Out of the ninety kilometer stretch, only the first thirty kilometers of the NPC Canal, known as NCP (minor) is expected to be constructed from 2024 to 2027[183] and the rest, NCP (major) during 2028 - 2032[184] (Asian Development

[180] There was also the perception that the waters of Moragahakanda would be offered to the North through the NCP Canal as 'a gift from the South' when the final settlement of the Sri Lankan ethnic issue is worked out (Wijenayake 2015a; 2015b). Writing an article to Daily Financial Times with the title "Moragahakanda Project for North-South Reconciliation", Wijenayake (2015a), the former General Manager of the State Engineering Corporation of Sri Lanka suggests that "the transfer of a substantial amount of water to Iranamadu tank to fulfil the water requirement of the population of Killinochchi and the drinking water needs of the Jaffna Peninsula ..... would be a gesture certainly to be appreciated by northerners and would be grateful to their Southern counterparts resulting in cordial relations between north and the south".

[181] In addition to Mahaweli water, water from the Kalu Ganga (river) will also be channelled to the Northern Province under this project.

[182] The Moragahakanda Project was launched twice, once in 2007 by the President Mahinda Rajapakse and in 2016 by President Maithripala Sirisena, who came to office in 2015 by defeating Rajapakse. The Project was launched by Rajapakse in 2007 when Maithripala Sirisena was the Minister responsible, as Minister of Mahaweli Development. It was considered as a pet project of Sirisena's whose constituency, North Central Province, was expected to benefit from the Project. Due to the lack of funding, project preparation work commenced only in 2010, after the Ministry of Mahaweli Development was handed over to Basil Rajapakse, the brother of President Rajapakse. This was said to be done against the wishes of Sirisena. Construction of the dam commenced in 2012, with Chinese funds, with the Kalu Ganga funded by Arab countries and water distribution by the ADB (Wijenayake 2015b; Jayasekara 2016). However, after coming to power President Sirisena re-launched the Project on the 25th July 2016 by depositing the first item of "treasure" at the site of the dam amid the chanting of *Pirith* and the beating of traditional drums.

[183] NCP (minor) is designed to take water upto Kahatagasdigiliya in the North Central Province (Asian Development Bank 2014; Wijenayake 2015b).

Bank 2014; Wijenayake 2015b). This means that the Iranamadu reservoir, the main reservoir in the north to be fed, will receive Mahaweli water only in 2032 if everything works out according to the plan[185]. Under this new plan, not only is the supply of Mahaweli water to the North being pushed to the end of the timeline, but the amount of water that is supposed to be sent to the water-stressed North is also planned to be channelled elsewhere. Interestingly, a new canal- the North Western Province (NWP) Canal, has now been initiated following instructions from the Secretary to the Ministry of Mahaweli Development in 2010, according to Wijenayake (2015b). By accommodating the wishes of President Rajapakse and Minister Rajapakse, the NWP Canal took priority over the NCP Canal and is to be urgently implemented under the Phase I. NWP Canal "with no relevance to the main project", is to absorb a major portion of Moragahakanda water[186] (Ibid). Less than a quarter of the total amount of Mahaweli water that enters the NCP Canal is expected to reach the Iranamadu reservoir to be redistributed to the water-stressed Northern Province thereafter[187]. So even after diverting the water of the Moragahakanda reservoir away though the newly emerged NWP Canal, what is left to be channelled to the North is also absorbed by the NCP (minor) to be distributed in the North Central Province[188]. The Chief Minister of the Northern Provincial Council, C. V. Vigneswaran renewed claims for the Tamil peoples' right to Mahaweli water, immediately after the Moragahakanda reservoir was ceremoniously opened by President Sirisena on the 25th July 2016. He expressed his views during a meeting held on 26th July at the Jaffna Irrigation Auditorium, to educate representatives of JICA and a group of Northern Provincial councilors, regarding the benefits to be passed on to the North. Arguing also on the ground that the central government would take action to set up Sinhalese settlements in the north if it were to hold sole ownership of the project, he demanded an agreement between the Central government and the Provincial Council in this regard (Hirunews 2016).

This long process of attempting to include and then exclude the NCP in the map of the AMDP points to the complexity of Sinhala nationalism at work. By being involved in the decades-long civil war with the Tamil militancy and defending the continuity of the territory shared by both the communities, the Sri

[184] The final stretch of sixty kilometers named as NCP (major) is expected to take water from Kahatagasdigiliya to the Chemadukulam reservoir in the Northern Province, by 2032. Mahaweli water of Chemadukulam will reach Iranamadu reservoir though natural drainage channels (Ibid).
[185] ADB funding is assured only for Phase I (Wijenayake 2015b).
[186] Sixty seven million cubic meters of water is said be diverted through NWP Canal to reservoirs in the North Western Province (Asian Development Bank 2014; Wijenayake 2015b).
[187] Out of four hundred and fourteen million cubic meters of water that enters the NCP Canal, only a hundred million cubic meters ultimately reaches Iranamadu (Ibid).
[188] Tanks in Anuradhapura alone, one of the two districts of the North Central Province, will receive twice the amount of water to be sent to the North (Ibid).

Lankan government was playing a game that looked paradoxical. As a feature common to other nations, the Sinhala nation was policing the nation's symbolic boundaries from the Tamil minority. The Mahaweli Valley, the land and water of the region, claimed by the *Mahaweli Vansaya* as the heartland of Sinhalese, play a special symbolic role in the narrative of the Sinhala nation and in defending the boundary bordering the Tamil other. The regular exclusion of the Tamils, or at least subordination of them through inequitable treatment is, hence, an important practice. The other face of this dual approach is to send signals of inclusion while maintaining exclusion as the fundamental guideline.

One such signal - an alternative response to the NCP Canal proposal, and an option that has received the blessing of the Sinhala nationalist lobby, can be found in the local language publication "Wewa" (the tank) by Udula Awusadahami, architect and former employee of the Central Engineering Consultancy Bureau (CECB) and a popular commentator on Sinhalese ancient irrigation systems (Awusadahami 2015[1999]). In his Chapter on “Who Needs Moragahakanda Reservoir”, Awusadahami argues the case that the Reservoir is unwarranted. According to him "the day the water of the central hills is taken to the far North is the day the South and the North will be divided by water" (Ibid, p. 159). In an interview with me, he summarised his objections against the NCP Canal by saying that "Taking 'Sinhala water' to the North is problematic" (Awusadahami 2016). In his next chapter he refers to the famous proposal "A River for Jaffna", as the solution for water-stressed Jaffna, the capital of the Northern Province (Ibid). The proposal made three hundred and fifty years ago by the Dutch Captain Hendrile van Reede and improved by British government agents and irrigation engineers, was presented by the Tamil engineer S. Arumugam in 1954 as a detailed plan, "A River for Jaffna", which was also known as the Arumugam Plan by now. The plan was to gradually convert Elephant Pass - the lagoon adjoining the Jaffna Peninsula, into a fresh water lake by preventing the entry of sea water into the lagoon on the one hand, and allowing the inflow of water from Kanakarayan Aru[189] on the other. The salinity of the adjoining inland lagoons, Vadamarachchi and Upparu, is also expected to be dealt with when fresh water from the Elephant Pass lagoon is allowed to flow through a canal, eventually making the lands in the peninsula suitable for use for agricultural purposes and the well water for drinking (see *Map 2*). This scheme that was nearly implemented in the 1950s, however had to be abandoned, as a result of the damage caused by severe floods[190] (Wijenayake 2013; Arumugam 2015). Awusadahami's proposal, in my opinion, is a reflection of

[189]. Kanakarayan Aru is a small river in Northern Province which starts its journey from the Vavuniya district, flows through the districts of Mullaitivu and Kilinochchi and reaches the sea.

[190] This proposal reemerged during the time of President Jayawardene but the subsequent ethnic tension in 1983 prevented the government from taking further action. Interest was refueled in 2007, when engineer Thiru Arumugam presented his father's 1954 plan at a workshop organised by the Pugwash Conferences on Science and World Affairs. The interest generated

the Sinhala mindset that seems to be embedded in the engineering designs of Mahaweli development since the 1960s. Without denying the issue of water-stress as a concern of the Tamil people and hoping that the issue would be solved through local means using locally available resources found in the North, the Mahaweli is perceived as a Sinhala property carrying 'Sinhala water' that should be used for the benefit of the Sinhalese. Domination over, and exclusion of 'others' and policing of the nation's symbolic boundaries is recognised as a common feature of nationalism (Lamont and Molnar 2002; Bonikowski 2016). By arguing a case that nationalist and ethnic policies are not just a by-product of modern state formation or of industrialisation, but that modernity itself rests on a basis of ethnic and nationalist principles, Wimmer (2002) points out that the main promises of modernity - political participation, equal treatment before the law, dignity for the weak and poor and social justice and security - were fully realised only for those who were regarded as true members of the nation and not for others (p.1). Subordination of others over nationals through discriminatory treatment is a standard practice in nationalism (Salame 2004, p. 442). Preference in resource allocation for the true members of a nation, as is the case for Sinhalese when it comes to Mahaweli water and exclusion of 'others', the Tamils in our case, fits well with the arguments forwarded by Wimmer and Salame on exclusion and subordination. Wimmer (2002) goes on to discuss ways in which nations mobilise action against others. Exchange of people, expulsion and ethnic cleansing are some of them (p. 3).

"Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and "North Central Province Canal" show how intensively a technological system can be linked with politics and with nationalism, in particular. Engineers were at the centre of both cases. Given below is a discussion on the political role of engineers, on the one hand, and on the politics of engineering design, on the other.

3.5 Engineers

Writing a general overview on engineers and engineering history Picon (2004) stresses this relationship between engineering and the non- engineering social space. By taking the history of French engineers which is closely related to the development of the modern French State and administration as an example, along with several others, he argues that "it is often easier to relate engineering history to political and social issues than to purely scientific and technological ones" (p. 427). The original plan of

by the presentation resulted in two resolutions; one by the Pugwash group themselves at the end of the workshop and the other by the Institution of Engineers at their Annual sessions, asking the government for immediate implementation of the plan. Even though the implementation of the plan did start in 2008, concerns have emerged as a result of the slow progress and the resistance of the fishing community involved (Wijenayake 2013; Arumugam 2015).

the Yaan Oya - Malwathu Oya - Madhuru Oya Operation to breach the continuity of the traditional homeland of Tamils was designed at the headquarters of Mahaweli operations which housed the three institutions responsible for the implementation of the AMDP: the Ministry of Lands, Land Development and Mahaweli Development; the Mahaweli Authority; and, interestingly, the Central Engineering Consultancy Bureau (CECB). Discussions to devise the plan were held regularly at the CECB itself - in the seventh floor office of Gunaratne who was an Additional General Manager of the CECB[191]. The CECB was the local counterpart for all foreign consultancy firms involved with designing and constructing the AMDP[192]. According to the Gunaratne's narrative, several key players joined the planning process at different stages. T. H. Karunatillake, Director Planning at the Mahaweli Ministry was the mastermind of the overall plan[193]. Minister Dissanayake, G. N. P. Panditharatne, Director General of the Mahaweli Authority and A. N. S. Kulasinghe, the eminent civil engineer and the founder Chairman of the CECB, were in agreement with the plan to varying degrees. "Herman (Gunaratne) did that with the blessing of Panditharatne. Minister was not informed well and JR (Jayawardene) knew nothing about it", according to one of my informants, who explained the evolution of the plan to me. Following instructions from Kulasinghe, the top leadership of the CECB contributed technical expertise vital to implement the plan. The General Manager of the CECB, G. G. Jayawardena and Deputy General Manager, H. B. Jayasekera were sent immediately to the Yaan Oya basin by Kulasinghe, to provide him with a pre-feasibility report. Gunaratne (2009[1988]) describes in detail the role played by the Chairman, General Manager and the deputy General Manager of the CECB in preparing the pre-feasibility report within a few days. After a tour of inspection Jayasekera proposed that an earth-filled dam be built within six months which would cost approximately Rs. 300 million. Jayasekera, highlighting the urgency of implementing the project, recommended to rush it through and advocated that people should be given land even before the dam was built. The political and administrative leadership of the Mahaweli development raised funds and

[191] Gunaratna joined the CECB in 1980 as an additional General Manager whose responsibility was to disseminate news and be in charge of the mass media apparatus within the Ministry of Mahaweli Development (Gunaratne 2009[1988]).

[192] Technical staff of the CECB assisted in the planning, investigation, design and construction supervision works. The CECB was solely responsible for the project management and design and supervision of the peripheral works of the project which included relocation of roads, towns and villages and the provision of infrastructure services. The CECB also advised and assisted the Client, the Mahaweli Authority of Sri Lanka in the management of the projects (see http://www.cecb.lk/sri-lanka-dams.html).

[193] As stated by the former officials of the CECB whom I interviewed, "Karunathila's plan was a response to the settlement of Indian Tamils in the Northern region" (Informant 8). According to UTHR(J) (1993b) it is, however, "too naive to credit Karunatilleke with having originated the possibilities of Systems B, I, M and L"."The establishment had a mind of its own and discretion was its code", observes (UTHR(J) 1993b). As discussed above in the Chapter, Systems B, I and M were already a part of the Master Plan that was developed in 1960s. What Karunatilleke has done could have been to suggest the re- inclusion of Systems I (Malwathu Oya) and System M (Yaan Oya) back in the AMDP and settle Sinhalese as a part of the political project to breech the continuity of the "traditional homeland" of Tamils.

were ready for a mass scale settlement in Yaan Oya, when Maduru Oya overtook the agenda with the involvement of Dimbulagala Seelalankara Thera.

Whether the involvement of the CECB and its top leadership in the Yaan Oya - Malwathu Oya - Madhuru Oya Operation can be considered a collective involvement of engineers and an involvement of an engineering institution or an accidental involvement of individuals who happened to be working for a professional organisation, is a matter for debate. Literature on engineers and their role in nationalism and nation building can be used to identify a range of involvements. Engineers' involvement as individuals, as small groups and as communities is recorded mainly in developmental nationalism where the modern state was in construction[194] (e.g. the case of the Hydro Electric Scheme discussed in Chapter 2) as well as in ethno nationalism where ethnic communities were on their way to become ethno nations and were in defence of their national boundaries from others, after they received the status of being a nation (e.g. the case of the AMDP as discussed here). What is more relevant to our discussion on the AMDP, however, is the involvement of engineers in the category mentioned second, in the kind of nationalism that looks either towards the past or across the boundary of the nation towards the other. The literature refers to at least a few such cases involving engineers as individuals and as groups. Barnes Wallis who was aiming to revive the greatness of the English nation through his designs of airplanes and submarines and envisaged a "second Elizabethan Age", is one such example (Zaidi 2008). The four German engineers of the Weimar and Nazi eras, Eugen Diesel, Viktor Engelhardt, Heinrich Hardensett

[194] The predominant position of technological advancement and industrialisation in the modern developmental state has brought engineers to the forefront of modern nation building. As discussed in Chapter 2, the prominent examples from the South Asian region for individual involvement in developmental nationalism are Mokshagundam Visvesvaraya and D. J. Wimalasurendra. B. J. Habibie, the Indonesian aeronautic engineer, the State Minister for Research and Technology and the Chair of the Agency for the Assessment and Application of Technology (BPPT), with his close personal relationship with President Suharto, offered a technology-based development strategy to accelerate the transformation of Indonesia from an agricultural-based society to a modern industrialised nation (Amir 2008, p. 318). Writing on national identity of inter-war Greek engineers, Antoniou *at el* (2007) identifies a list of engineers from the early twentieth century - for example Themistoklis Charitakis, Nikolaos Kitsikis and Athsnasios Roussopoulos, who represented the community of engineers who underwent an ideological radicalization through the discovery and appropriation of the ideology of technocracy and canvassed for technical state of varying degrees (pp. 242, 252). During this era of rationalisation, the era during which the industrial and technological development of Greece was visualised, the entire community of engineers was considered important, equally by the community of engineers themselves and by the political leadership of the country. Eleftherios Venizelos, the Prime Minister at the time, argued in favour of a stronger role for engineers in the country's public affairs (p. 249). Writing an introduction to a special issue on the national identities of engineers Chatzis (2007) gives the credit to the role played by engineers in general in the formation of modern state that was bound up with the promise of a brighter future (p. 194). French state engineers of the first half of the nineteenth century, as a community, were considered not only as technical experts but also as members of the intellectual bourgeoisie (Belhoste and Chatzis 2007). According to Belhoste and Chatzis, "French technocrats were not nation builders, however, serving the Nation was a major part of their identity" (p. 217). Mexican engineers were a part of a nationalist movement during the early twentieth century and participated in the nationalisation of Mexican oil and organisation and management of state agencies by 1940s. By continuing the tradition of being a main player in Mexican nationalism, Mexican engineers played a prominent role in the mid twentieth century in the transition from a socialist state to a modern industrial technocratic state. Quite often engineers held top positions in the Mexican state administration, according to Lucena (2007, p. 283).

and Mervin Holzer, shared a common interest in nostalgia for a German past that needed to be revived (Herf 1984). For Diesel, the present was an age of despiritualisation (p. 163). Like Diesel, Engelhardt too exempted technology from their indictment of a godforsaken present. Parallels could be drawn between Engelhardt's attack on modern physics and Nazis' effort to establish an Aryan physics (p.178). After the Nazi seizure of power, Hardensett and Holzer both urged their fellow engineers to rally around the new regime (p. 179). Antoniou et al (2007) refers to a similar case in Greece. According to them the dictatorship of Loannis Metaxas, a former military engineer and a follower of Mussolini, was a rule that proposed a linear continuity between ancient Greece and the modern Greek nation. The cornerstones of Metaxas ideology, according to Antoniou et al, were the return to the great and eternal essence of Greek civilisation, the summoning of an eternal Greek spirit and the domination of spirit, faith, and collective over soulless matter, cold reason and individualism (p. 253). The involvement of individual engineers in the Yaan Oya - Malwathu Oya - Madhuru Oya Operation is different to the experiences discussed above in several senses. While the English, German and Greek experiences were positioned on discourses on the greatness of the nations' pasts, the Operation designed at the headquarters of the CECB aimed to deal with the Tamil other through action. Rather than constructing a discourse, the focus was on practical action, to nullify the Tamil claim to a homeland. In contrast to the other countries' cases, the names of the engineers who joined the Yaan Oya - Malwathu Oya - Madhuru Oya Operation did not appear prominently in the nationalist narrative of the AMDP, for two reasons. Firstly, they didn't belong to the core group of players who conceptualised the operation. Secondly, the secrecy maintained by the players of the Operation and the silence observed by the media prevented their names from being incorporated in the Sinhala nationalist narrative.

The involvement of engineers is also observed in the case of the North-Central Province Canal. This time it was more a collective than individual involvement. According to the narrative of the former officials of the CECB, who were senior engineers whom I interviewed in the course of my fieldwork, the decision to drop the Moragahakanda reservoir and the NCP Canal from the AMDP - the ethno political decision that affected Sinhala - Tamil relations in a serious way, was a technical one (Informant 8 and 9). As per this technical narrative, the draft Master Plan as a proposal of possible options of reservoirs, offered two choices to Sri Lankan decisionmakers; "high Victoria - low Randenigala" or "low Victoria – high Randenigala", referring to the heights of Victoria and Randenigala dams and therefore the amount of water that can be retained. "Low Victoria - high Randenigala" was considered the best option to divert Mahaweli water to the North and the other, "high Victoria - low Randenigala", meant no Moragahakanda and no NCP Canal. According to my informants, "low Victoria - high Randenigala" was

the option that was promoted during 1960s and 1970s, by the CECB which was dominated by Tamil engineers. "Most of them were Tamils and most were Christians", according to one of them. In his Chapter on “Who Needs Mokaragahakanda Reservoir?”, Awusadahami also argues the case that the Reservoir is unwarranted and was a proposal forwarded since early 1960s by "a group of engineers", referring most probably to the same group of Tamil engineers. As per the narrative of my informants, the preference for "low Victoria - high Randenigala" was a result of racial bias among a group of Tamil engineers, Tamil officials and politicians favouring Tamil interests. It was the popular belief among the Sinhala engineers at the CECB that the Minister of Irrigation, Power and Highways of the United Front government (1970-1977), Maithripala Senanayake, under whose purview the Mahaweli diversion fell, was influenced by Tamil interests in two ways. On the one hand, T. Sivagnanam, the Secretary to the Ministry was a Tamil who was perceived to promote the Tamil cause. Ranji Hardy, the high profile Tamil journalist and the Minister’s new wife, was considered on the other hand, to further influence the Minister to favour the "low Victoria - high Randenigala" option[195]. "Sivagnanam and Ranji had a good understanding and they pushed for Moragahakanda", according to one of my informants. "The duo succeeded in receiving the cabinet approval for the "low Victoria - high Randenigala" scheme". This decision, however, was overturned when the United National Party government came to power and decided to accelerate the programme. A top administrator of the CECB, a senior Sinhala engineer who was also involved with the previous case, "Yaan Oya - Malwathu Oya - Maduru Oya Operation", is credited by my informant for changing the opinion of the Jayawardene government to go for the "high Victoria - low Randenigala" option, forcing the components of Moragahakanda and the NCP Canal to be dropped from the AMDP, as a result. The "high Victoria - low Randenigala" option was promoted as the more technically viable option out of the two[196]. In comparison to the Yaan Oya - Malwathu Oya - Madhuru Oya Operation where the roles of individual engineers were prominent, the narrative of the

[195] An unclassified cable sent from the Embassy of the United States in Colombo in 1976 and published by Wikileaks identified Senanayake as being "something of a bridge to Tamil community in Sri Lanka after his marriage in 1963 to Ranji Hardy, a Tamil". "Mrs. Ranji Senanayake, aged in her late forties, is colorful former newspaper woman..... her race - Tamil religion - Anglican - were thought to be political liability for Senanayake's career at time of their marriage in 1963. However, this does not appear to have been so. Mrs. Senanayake is said to be bright, tough, and very ambitious for her husband. She has made no secret of her belief that her husband should someday become Prime Minister", continued the cable (Public Library of US Diplomacy 1976). Senanayake's relationship with Handy and her influence on him were topics of public discussion in the 1960s. Imbulana (2016) refers to one such incident in parliament where Maithripala Senanayake kept taunting Dudley Senanayake over the concession Dudley's government was allegedly granting to the Tamils. Dudley is said to have shot back "Mr Speaker, I must congratulate the Hon. Member for Medawacchiya on his finding a way to observe "Sinhala Only" by day, and the "Reasonable Use of Tamil" by night.

[196] Maithripala Senanayake, the former Minister, in 1984 blamed the UNP government for this change in decision to go for a higher dam in Victoria and a lower one in Randenigala. He held this change of decision as the reason for the complete submersion of Theldeniya town, a traditional land of the Kandyan peasantry, a view that was held by others as well (Peiris 1984; Awusadahami 2015[1999], p. 158).

North Central Province Canal refers to the involvement of collectives of engineers divided along ethnic lines. There were two camps of engineers who were involved with the debate on the technical viability of the "low Victoria - high Randenigala" scheme and their views in favour and against coincided with the differences of their ethnic identities, leaving it unclear whether it was the engineering or nationalism or, in fact, nationalism of engineering that made Tamil and Sinhalese engineers stand on different sides of the technical debate.

Parallels can also be drawn between the involvement of Sinhala and Tamil engineers of the CECB in deciding the fate of the NCP Canal, and other such involvements by engineers in other countries. Antoniou et al (2007) and Bassett (2009) refer to the involvements of small groups of engineers in the process of modern state building in Greece and India, respectively[197]. Examples can also be given for the involvement of engineers attached to engineering institutions in building industrial nations. Amir (2008), discussing the process of industrialisation in Indonesia, refers to the roles played by engineers from the Agency for the Assessment and Application of Technology (BPPT) and the engineering academics of the Institut Teknologi Bandung (ITB)[198]. While the experiences of Greece, India and Indonesia were about the role of small groups of engineers in imagining an industrially advanced common future, the following examples from Mexico and France, the closest cases to the role played by CECB in the “North-Central Province Canal”, indicate to involvements by engineers in mobilising Mexican and French nationalism against an enemy or an external threat. Under the subtitle "patriot engineers constructed and defended the Mexican territory" Lucena (2007) records three occasions during the first half of the nineteenth century where engineers attached to different institutions dealt with the ‘other’ (i.e. non-Mexican). Criollo[199] and Mestizo,[200] engineers of Colegio Nacional de Mineria "discovered, surveyed, mapped and wrote about their territory and natural wealth, distinguishing what was 'ours' (Mexican) and 'theirs' (non-Mexicans)" (p. 277). According to Lucena, patriotism among engineers was further reinforced by the threat of foreign invasions. It is said that the military engineering students from the

[197] Antoniou et al (2007) refers to "Zurich Circle", the small group of Greek engineers, graduates of German-speaking Polytechnic Schools, especially those who were graduates of the Federal Polytechnic School of Zurich, who made a decisive contribution in the social and institutional formation of the Greek industrial class and in Greek industrialisation (p. 245). MIT trained Indian engineers can be placed at an equal level with the "Zurich Circle" from the point of privileged training and their influence in modern nation building. Even though they were an extraordinarily tiny group unrepresentative of the larger Indian population, MIT Alumni Association of Indian engineers advised the government on an informal basis and occupied "an astounding number of the high-level positions in the Indian technical community (Bassett 2009, pp. 228-230).

[198] The engineer colleagues of Habibie, the aeronautic engineer who visualised the modern industrial nation of Indonesia, at the BPPT worked with him to build the industrialised nation of Indonesia during the latter part of the twentieth century (p. 318). According to Amir, a number of Habibie loyalists were faculty members at ITB and for years ITB graduates filled key positions in projects that were designed to move Indonesia towards industrialisation (Amir 2008, p. 319).

[199] Criollo refers to the community of American born of European ancestry (Lucena 2007, p. 276).

[200] Mestizo refers to the community of American born of mixed white and Indian ancestry (Lucena 2007, p. 277).

Military School became child heroes after they unsuccessfully defended the Castle of Chapultepec from US invaders (p. 277). Engineering students of the Colegio de Minas were also called to defend Mexican territory in the event of another invasion, says Lucena (p. 278). The discourse on French nuclear engineers is also a case of 'othering' an alien (i.e. American technology) and re-establishing the lost glory of France, lost as a result of "wartime defeat, and/or postwar decolonization, and/or general economic and industrial backwardness" (Hecht 1998, p. 330). While referring to technological prowess as a main element of French national identity, the French nuclear program was treated by Hecht as a site for articulating and negotiating the meaning of a technological France and reviving its lost glory (Ibid).

3.6 Engineering designs

The two cases "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North Central Province Canal" add a new dimension to the existing discussion that was generated by the five narratives. If the five narratives described above provide texts to uncover the Sinhala nationalist logic at work when the AMDP is in full operation, the two cases "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North Central Province Canal" refer to politics at play in the early stages; at the stage of designing the Project. *Map 3* shows how the project map of the AMDP underwent changes in the process of designing, highlighting the relationship between technical details (e.g. heights of dams and lengths and spread of canals) and national politics (e.g. responses of the Sinhala nation and counter responses by the Tamil nation).

The case of the "North Central Province Canal" shows how certain technical options were made and by whom, how technical components of the overall technological system of the AMDP were dropped on the grounds of technical feasibility and how the technical sketch of the AMDP was amended within a context of intense ethnic tensions, conflicts, a civil war and post-war politics between the Southern government and Tamil counterparts of the North; each representing the interests of the Sinhala and Tamil nations, respectively. The choice of the ‘high Victoria - low Randenigala’ option promoted by the Sinhalese engineers on technical grounds, overlapped surprisingly, with the interests of the Sinhalese to prevent 'Sinhala water' flowing to the 'land of Tamils' by not going ahead with the construction of Moragahakanda reservoir and the NCP Canal. Amendments done to the technical design during the recent past to add Moragahakanda and the NCP Canal and the very recent attempt thereafter, to introduce and prioritise the new North Western Province (NWP) Canal that was never in the Mahaweli development landscape since its origin in the 1960s, too stays well in line with the Sinhala logic of

excluding the Tamil other from sharing the benefits of development. The case of “Yaan Oya - Malwathu Oya - Madhuru Oya Operation” goes a step further in highlighting the intimate relationship between technical design and nationalist politics. As expressed by the designers themselves, the expansion of the reservoir-tank-canal web of the AMDP in Yaan Oya, Malwathu Oya and Madhuru Oya was done with the sole purpose of breaching the continuity of the Tamil land, by establishing Sinhala settlements at three points. I would like to argue that the presence of nationalist politics at the stage of designing qualifies the AMDP to be identified under the category of technologies which are inherently nationalistic[201]. The design of the AMDP was most probably shaped by the interests of Sinhala nationalism on the one hand, while the AMDP being constructed based on the above mentioned design results as a tool to perform a variety of Sinhala nationalistic functions, on the other.

By referring to Sri Lankan irrigation settlements Pfaffenberger (1992) observes that "every aspect of social life, including family life and worship, was designed along with the dams and canals" (p. 291). What Pfaffenberger perhaps missed in his observation is a reference to the key role played by the interests of Sinhala nation, in the kind of design he talks about. As informed by the five narratives described within the context of this Chapter, the AMDP, while being diverse in the way one can make sense of it, points to a common thread, a rationale shared by all the discourses, which is the promotion of the agenda of Sinhala nationalism. Based on a logic that is very Sinhala Buddhist, the complex network of reservoirs, dams, canals, highways, peasant settlements and power stations of the AMDP reorganised social life, not just along waterways constructed under the AMDP, but the social life of the entire population of the island, by presenting modernism within a cover of Sinhala tradition; by reediting the political power balance in the Sinhala constituency; by including Sinhalese in and excluding Tamils from the process of development; by engaging to counter the Tamil other and even by reorganising the

[201] For many theorists, according to Matthewman (2011), "what a technology is cannot be determined by design. Instead, technological meaning is always to be found in use" (p. 80). The telephone, that was originally designed as a mass broadcasting technology, but established later as a person-to-person technology, is taken by Matthewman as an example to support the argument (p. 80). Social practice, not design, ultimately determines meaning, is the rationale behind this thought. The focus of this argument is the process of meaning construction and the stage at which the final meaning is consolidated. It doesn’t, however, deny the existence of political intentions of designers and their influence in deciding the shape of the technological system that has the potential of acting as a tool to achieve political objectives. In my opinion this argument doesn't work for the AMDP for several reasons. Firstly, the design restricts the use of the technological system (i.e. the AMDP) to its intended users (i.e. Sinhalese) so that the political intention accommodated in the design is also reflected in its use. Secondly, the political effect of the AMDP in dealing with the Tamil other is not really dependent on a discourse constructed to achieve the objective, but on physical action caused by absence of the NCP or presence of Sinhala settlements. Therefore, the general rule that the political effects of the technology are lost when the discourse cannot be sustained anymore is only partially valid here (Matthewman 2011, p. 83). Thirdly, as Winner (1993b, p. 369) argued for technological systems in general, the political meaning of the design of the AMDP is cemented by the broader political structures of Sri Lankan society, ongoing patterns of systemic inequality in the ethno-political landscape of the island and the working of power between the majority Sinhala and minority Tamil communities.

imagination of the Sinhalese about themselves and others. Not only did the AMDP rearrange the present, it also attempted to reorganise the past (e.g. through interventions such as the *Mahaweli Vansaya*). As discussed in the introduction, recent studies on technology are about the politicised nature of technology and the technological construction of the socio-political. Following the same trend, the AMDP can be seen as a classic example of (Sinhala) nationalist nature of technology and the technological construction of (Sinhala) nationalism.

Chapter 4

Giving up a past for a technologically better past? Ravana the engineer and his technological dynasty (2000-2016)

The story of "Ravana the engineer and his technological dynasty" provides a case of how engineering - mythical engineering to be exact, acts as a ground on which an attempt is made to redefine a nation. If the case of the Accelerated Mahaweli Development Project is about the role that a massive technological system performs through multiple nationalistic functions, by mobilising the imagination of a nation towards a grand, remembered past, the narrative of Ravana, by moving a step further, tries to replace these long held memories of a particular glorious past with a past that is even more glorious and technologically advanced. It is a rare case of a nation attempting to give up its past for a better past, as I would like to argue in the course of this Chapter. As a mythical technical site, the narrative of Ravana seems to produce the opposite effect to that produced by the Hydro Electric Scheme discussed in Chapter 2. Instead of mobilising the collective imagination of a community for a fresh, highly industrialised future, the narrative of Ravana attempts to mobilise the imagination for a technologically sophisticated past.

4.1 The tale of two pasts in conflict

According to popular perception, the Sinhalese, the majority ethnic community of Sri Lanka, are inheritors of a great civilization which has a history of thousands of years. Up until the end of the twentieth century the dominant narrative of the Sinhala nation that was circulated among the general public, unchallenged seriously by any other popular narrative, was a simple story. According to this story the Sinhalese descend from the Aryan Prince Vijaya who arrived in the island from North India in 543 BC with his retinue of seven hundred members. Vijaya defeated the Yakkas who were the original inhabitants of the island and became the first of the continuous list of monarchs who ruled Sri Lanka from then. This civilization which was a little over two thousand five hundred years old with advanced irrigation and construction engineering, was at its peak during the periods of the Anuradhapura (fourth

century BC to eleventh century AD) and Polonnaruwa (eleventh century AD to thirteenth century AD) kingdoms. When Buddhism was introduced in 236 BC by Arhat Mahinda, son of the Indian Emperor Asoka, Sri Lanka became a Buddhist country. The protection of Buddhism became the responsibility of the island's head of state, a responsibility handed over by the Buddha himself to the country's leadership. Amidst regular threats by Tamil invaders from South India, the Sinhalese were able to perform their duty and protect Theravada Buddhism, the original version of Buddha's word in its pure form. The Tamils, Muslims, Burgers and other non-Sinhala ethnicities are all communities that arrived in the island of the Sinhalese at different stages, later in history. The *Mahavamsa*, the ancient Chronicle which can be loosely translated as the Great Chronicle, documents this history of Sinhalese.

Even though the main lines of this narrative were challenged as myths in the scholarly world for some time, it survived as the widely accepted history of the Sinhala nation in political, journalistic and popular forums, till the end of twentieth century. There is much to prove that this scenario has changed, with the wide circulation of another narrative, the Ravana narrative as introduced above, which captured the popular imagination of the Sinhalese very quickly in recent times. By positioning itself on the grounds of a technologically advanced past, it contests almost every single element of the previous narrative based on which the Sinhala nation was imagined so far. It rejects the theory of the Aryan origin of the Sinhalese and does not accept that the Sinhalese are Prince Vijaya's descendants. Instead, the Ravana narrative expounds the view that the Sinhalese or Helas or Hela-Yakkas or Hela-Asuras according to the new terminology[202], are the descendants of the extremely powerful Yakka [demon] King, Ravana, a character in the Hindu epic *Ramayanaya*, who ruled Lankapura almost four thousand years ago. He is the major figure in the technically and spiritually advanced Hela dynasty that provided leadership to the entire world (*Map 4* shows the global spread of the Ravana dynasty, as illustrated by one of the key commentators on the Ravana narrative). Interestingly, the narrative uproots Ravana from the *Ramayanaya* and relocates him on new ground with minimum ties to India. It suggests that the civilisation of the Hela nation has a history longer than two thousand five hundred years and positions the golden era of the nation in much earlier times than the Anuradhapura and Polonnaruwa Kingdoms. Advances of the Helas in engineering were in an array of fields such as aviation, sailing, textile engineering and nuclear warfare, in addition to the fields of irrigation and construction engineering.

[202] 'Hela' within the current narrative, is the word used to identify the inhabitants of early Sri Lanka, known as Lankapura. Yakka is the preferred term of the Ravana narrative to identify the group of people from whom the Sinhalese descend. The term Asura is not defined well and is used by some commentators to distinguish the forefathers of Sinhala people. These terms are used interchangeably by the popular commentators on the Ravana discourse to refer to the ancestors of the Sinhalese.

According to this new narrative, Buddhism was introduced to the Yakkas, the original inhabitants of the island, centuries before the supposed arrival of Mahinda and the kind of Buddhism practiced by Yakkas was more in line with Mahayana tradition[203] than Theravada tradition[204]. In the Ravana narrative, the *Mahavamsa* is considered a gross distortion of the real history of Sinhala nation.

Within the context of this radical revision of the history of the Sinhalese around which the Sinhala nation was imagined so far, I would like to assess the degree of the spread of this new narrative among the Sinhalese in order to identify the nature of the technologically advanced Ravana dynasty that is featured prominently in discussions in the popular arena, and to address the question of why there is an urge for a redefinition of the Sinhala nation at this moment of time, and how it is happening.

4.2 The Ravana surge in public space[205]

The recent surge of interest in Ravana is rather widespread and also unusual when taking into consideration the fact that the memory of a king who lived thousands of years ago has little to do with the multiple socio-political-economic problems the island is entangled with at this moment. This re-adjusting of the collective memory of the Sinhalese of their glorious past is done through a discourse constructed in popular space with the maximum use of traditional and modern media. Radio and television channels have allocated weekly time slots to discuss the Ravana led Hela history by experts of the Ravana discourse[206]. Many Sinhala language newspapers have published serial articles on the special skills of King Ravana and the contributions of the Hela dynasty[207]. Newspapers published in English have also fallen in line with this trend[208]. Interactive websites with a wide readership which have been in

[203] Mahayana is the version of Buddhism that is being practiced in East and Southeast Asian countries such as Japan, Korea, Indonesia, Malaysia, Singapore, Tibet, Bhutan, Mongolia, Nepal, etc.. See section 4.5.2.2 with the title "Abhayagiri tradition of Buddhism" for more details on this, as highlighted in the Ravana narrative.

[204] Theravada is the version of Buddhism that is being practiced in Sri Lanka as well as in Bangladesh, Cambodia, India, Laos, Myanmar, Nepal, Thailand, etc..

[205] Fieldwork regarding this was conducted from 2013 to 2015.

[206] V-FM radio and television channels Derana, Swarnawahini and ITN aired a series of programmes. V-FM, Derana and Swarnawahini are private channels and ITN is one of the two state-run television channels. V-FM aired a five month long programme, *Lakviskam Ravana*, from November 2012 to March 2013 which was dedicated to Ravana. Derana *Helawanhsaya* too was dedicated to discussing the Ravana dynasty. This was a weekly programme telecast from 26 September 2013 to 29 May 2014 (www.derana.lk/helawanshaysa).

[207] Examples include the weekly newspapers *Randiva* (which carried a series of weekly articles for seven months from March 2012 to September 2012), *Maubima* (under the title *Ravanavatha* ran a series of weekly articles from 2010 to 2011 based on interviews conducted with Mirando Obesekara, one of the key commentators of the Ravana discourse), *Tharunaya* (under the title *Sinhale Ravana* ran 29 weekly articles from November 2013 to June 2014).

[208] The English daily, *Daily Mirror* joined the trend lately in 2014 by carrying articles on Ravana once a week.

operation for several years have also played a prominent role in constructing the Ravana narrative[209]. There are several research initiatives created to unearth evidence to establish a Ravana history[210]. Bookshops in the capital city Colombo and in other major towns display new and re-published books on different dimensions of the Ravana narrative[211]. Several fictional accounts involving King Ravana have been written and re-published over the past few years[212]. Songs dedicated to the great Hela King Ravana are available on Youtube[213]. Some of these are composed by a musical group called the "Ravana Brothers". At the time of writing, newspapers reported the launch of a film on King Ravana[214]. Commercial institutions also seem to tap into the social capital built by the popular Ravana narrative, by naming institutions using the name Ravana[215]. Exhibitions and ceremonies are held to commemorate Ravana[216]. The involvement of the state in promoting the Ravana narrative was visible when its most popular commentators were felicitated by the Ministry of Culture and the Arts[217]. The Ministries of

[209] *Sahurda Thotupala*, a blog administered by Dasun Edirisinghe, that was active from 2010 to mid 2012 was one of the famous sites (124 posts on various aspects of Hela Asura history explained in a very interactive format. Around 214,000 readership by 21 May 2014). *Ravana -The Greatest Emperor of Asia* links to some of the Ravana related sites, books, sources, etc (around 194,000 hits by 21 May 2014). *Ravana Brothers* is accessible only to its membership.

[210] These initiatives include research being conducted by Manewe Vimalarathana thero, the blog *Sahurdha Thotupola*, the site *Ravana Brothers*, Sri Ravana Research Institute, the Head Quarters of Ravana Research and the Ramayana Trail Executive Committee (run by the Ministry of Tourism Sri Lanka).

[211] Examples include Ahubudu (2007[1988]), Vimalarathana (2008[2001]; 2012), Dasanayake (2009), Kiriella (2009), Ranasinghe (2009), Chulawansa (2010; 2012), Cumaratunga (2012 [1938]), Seneviratne (2012[1991]), Obesekara (2006; 2012; 2013; 2014), Siri Dhammalankara (2012a; 2012b), Jayathilake (2013 [2010]), Gunasekara (2013a[2012]; 2013b[2009, 2007]), Siri Sumangala (2013), Suddahami (2012[2006]) and Vithana Gamage (2015).

[212] Examples include Vimalarathana (2009), Fernando (2013a; 2013b), Susitha (2013, first edition in 2011 and second and third editions before 2013)

[213] Examples include *Ravana* by Erandi Madushika created in 2017 (65,403 views by 19th December 2017); *Angam Thulawa* by Jalitha Amarasinghe created in 2009 (45,354 views by 15th December 2014); *Ravana New Year song* by the Ravana Brothers in 2014 (36015 views by 19th December 2017); *Ravana song* by Ravana Brothers in 2011 (11,937 views by 15th December 2014); and *Ravana* by ElaKiri in 2012 (3024 views by 15th December 2014).

[214] The first of three films on emperor Ravana, *Gagana Serisaranna* [Voyager in the sky] is to be directed by Sanjaya Nirmal (Daily Mirror, 4 August 2014).

[215] The Ravana Aviation Academy is a private aviation training school (www.ravanaaviation.com) and www.Sriravana.com is a private software business selling software on astrology.

[216] An exhibition of paintings of Ravana, *Indumini Maha Ravana*, was held in Colombo on the 19 and 20 February 2011. The *Devram Vehera* – a popular temple on the outskirts of Colombo, headed by a monk who was a former parliamentarian, started an annual procession called the *Maha Ravana Perahera* which took place in 2013 and 2014. On 9 October 2014, a statue of King Ravana was re-crowned in Kelaniya, near Colombo, to mark 5000 years of Ravana history and the beginning of a new Hela Era.

[217] Dr Sooriya Gunasekara, Dr Mirando Obesekara and Mr Palitha Galappathi were felicitated by the Minister of Culture and the Art for their great service rendered to promote research on King Ravana, on 1st August 2014 at a ceremony held at the Auditorium of the Colombo Museum (Viewed on 21 January 2015 at http://www.culturaldept.gov.lk/web/index.php?option=com_content&view=article&id=179%3Aa-felicitation-ceremony-in-honour-of-the-king-sri-maha-ravana-on-01-august-&catid=3%3Anews-a-events&Itemid=70&lang=en)

Tourism and Technology and Research have indicated interest in exploring Hela history[218]. It is said that secondary school history text books will be soon revised to include new lessons on Ravana[219].

The narrative of Ravana as informed by the range of sources mentioned above is not coherent and can be best regarded as a collection of sub narratives stored in a single container. Though these sub narratives share a common goal - to establish the grand, spiritually and technologically advanced, civilisation of the Ravana dynasty and to portray the Sinhalese or Helas as descendants of the Yakka nation of Ravana, they also carry contradictions between themselves. This loosely coordinated contemporary narrative of Ravana draws information from at least three important sources: information available on the Internet; interpretations of 'investigative journalism' conducted by popular media channels, linking ancient Sri Lankan archeological sites to the events in the Ravana narrative; and commentaries on *Vargapurnikava*, the mysterious ola leaf that is said to carry the history of one Yakka clan, the Ravi Shailaasha community, whose descendants supposedly exist even today.

The Internet remains a main source of information used to construct the contemporary narrative of Ravana. Freely available information seems to be used liberally by the commentators on the narrative, often with no referencing. Some of the popular ancient texts written originally in Sanskrit, translations and commentaries of which are available in English and easily accessible through the Internet, seem to be used when describing the scientific and technical achievements of the Hela civilization. For example the translation of the Sanskrit manuscript, *Vimanika Shastra*[220], and available on the Internet[221] is used extensively to describe the aviation skills of the Hela civilization[222]. In the early twentieth century, the

[218] The Ramayana Trail Executive Committee was an initiative of the Ministry of Tourism that was launched to promote Ravana history. At a meeting held in September 2014 in Colombo at which the author was a participant, a group conducting research on Ravana history revealed to the author that the Ministry of Technology and Research has allocated funds for excavations at sites that are said to be linked to the Ravana dynasty.

[219] This was told to the author by a prominent commentator on the Ravana discourse, at a private meeting in Anuradhapura, in the North Central Province of Sri Lanka (Informant 1).

[220] "The *Vimanika Shastra*" by G. R. Josyer is said to be the English translation of the Sanskrit text "*Vymaanika Shaastra*" authored originally by Maharshi Bharadwaaja. The *Vimanika Shastra* published in 1973, contains a detailed account of parts of an aircraft and aspects of aviation in the past. Even though the *Vimanika Shastra* is the popular text widely referenced in the Sri Lankan narrative of Ravana, there seems to be another document with the same Sanskrit content. This text with a Hindi translation is said to have been published in 1959, more than a decade before Josyer's translation. Mukunda et al (1974) refers to this publication, the "*Brihad Vimana Shastra*", which was written by Shri Bramhamuni Parivrajaka. According to Mukuna et al both publications contain similar content except for a number of technical drawings of different aircraft types, in Josyer's translation.

[221] http://upload.vedpuran.net/Uploads/121113the_vimanika_shastra.pdf, accessed on 23rd June 2016

[222] The Ravana discourse refers to many texts that have references to airplanes and air wars such as R*igveda Sanhithava, Hariwansa, Makandesa Puraana, Vishnu Purana, Vickamor Vashee, Uththararama Charika, Harsha Charika, Samaarangana Suthradhara, Shathapatha Brahmana* and the Tamil language *Jeevaka Chinthamani*. *Samaarangana Suthradhara* with two

Hela Havula movement which was created to reform and purify the main local language of Sinhala, argued that all Indian languages including Sanskrit, originated from the Hela language, that these Sanskrit texts were written originally in the Hela language and therefore are texts describing the advances in Hela science and technology and not of Indian origin.

One of the main objectives of the series of programmes conducted on radio and television, was to position or reposition archeological findings to fit the new Ravana narrative. It was an exercise of "demythicization" in the sense of Obeyesekere, an attempt to rationalise myths by providing 'proofs', as discussed in the Introduction. The presenter of the popular programme *Helawanshaya* for example, visited archaeological sites with his crew of cameramen on a weekly basis, in search of new evidence to establish the history of Helas as descendants of Yakkas[223].

Oral descriptions and written commentaries of *Vargapurnikava*, however, remains the most important authentic source of information within the context of the modern Ravana narrative. In the absence of the mysterious thousand page ola leaf which is said to have been written in the late eighteenth century in Yakka language, supposedly a dead language, the two commentaries written by Thero Manewe Vimalarathana in the Sinhala language under the titles "Unknown Information on Yakka Tribe" (2008) and "The Language of the Yakkas and the Story of Ravi Shailaasha Community " (2012) are said to be based on notes taken from the original ola leaf and interpreted by senior members of the current generation of the *Yakka* lineage[224]. *Vargapurnikava* is often referenced by commentators on Ravana discourse and Thero Vimalarathana is highly respected and invited as a chief guest to Ravana related events.

Using the diverse sources as described above to provide primary information and with a whole range of books (semi-factual and fiction), different categories of newspapers and electronic media - including social media, reproducing information available through primary sources, the modern narrative of

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hundred and thirty slokas is given as a complete description of vimanas covering the aspects of production of airplanes, take off, long distance flights, landing and constraints and issues.

[223] Interestingly, Obeyesekere (1984) in his legendary work, "The Cult of the Goddess Pattini", takes the same example of the Ravana myth to describe and introduce the term 'demythicisation'. "In the Ramayanaya there is an elaborate description of the wealth and prosperity of Sri Lanka and an account of how Ravana flew to India in a "peacock machine"", says Obeyesekere (p. 379). According to him, "these accounts are rationsalised by educated people so that they believe Sri Lanka had a glorious civilisation before the Indian colonisation of the island in the sixth century B.C., and among the nation's accomplishments is the invention of an aircraft" (Ibid).

[224] Vimalarathana Thero, a Buddhist monk, identifies himself as a member of the *Yakka* lineage, members of whom are said to still survive in the North Central Province of Sri Lanka, and claims to be a member of the family that has custodianship of *Vargapurnikava* from the previous generation.

Ravana seems to be able to reach different segments of the Sinhala community, including groups with different social backgrounds, belonging to different age and language groups. The advanced status of the Ravana dynasty's technological development occupies a prominent place in the narrative, with a great deal of the promotional material being used to discuss achievements in a variety of fields in engineering.

4.3 Ravana the engineer, and his technological dynasty[225]

King Ravana is considered skilled in many trades. Each head of his famous ten-head image is said to symbolically represent his expertise in ten different disciplines; languages, law, philosophy, administration, music, spiritual wisdom, astrology, medical science[226], war techniques[227] and engineering. Descriptions of Ravana's engineering skills, however, overshadow his other skills and hence portray him as an engineer rather than as an expert in any other profession. Contemporary discourse on Ravana goes into minute details of the advanced features of engineering used by him and his dynasty which allowed Hela to be a highly advanced civilisation, even introducing these advances to other parts of the world and to rule the world. The Helas of the Ravana dynasty who were regarded as professionals in energy engineering were said to have used a range of energy sources to fuel the Yakka civilization; solar, magnetic force, gravitational force, nuclear energy and energy channeled through crystals are repeatedly mentioned.

Aviation is highlighted in the range of expertise. The Helas, who are descended from Ravana, were identified as excellent aviators, hence giving a high-tech touch to Ravana's Hela civilization, in comparison to the agriculturally advanced civilisation of the kingdoms of Anuradhapura and Polonnaruwa, as represented in the Vijaya narrative. Air travel included space travel to other planets in the solar system. Sophisticated flying machines called *Vimanas* or *Pushpaka Rathas* were said to be used

[225] Details of this section were based on the references mentioned in this section as well as on numerous sources mentioned in the previous section, "Ravana surge in public space", that is reproduced again and again in all forms of communication.

[226] The sage Pulasthi, the grandfather of King Ravana and from whom he has inherited his medical skills, is said to have founded the fundamentals and the practice of the eastern Ayurvedic treatment. Gunasekara (2013a) lists down six medical books authored by Ravana and available for sale in 2013 at the "Modern Book Company" in Nugegoda, just outside Colombo City. They are *Kumara Thanthra* (medical care for children), *Uddeesa Thanthra* (treatment through hypnotizing), *Arka Prakasha* (treatment using spirits of trees), *Naadi Prakaasha* (diagnosing using pulse), *Marma Vignana* (treatment through pressure points) and *Vidi Vaidyaka* (medical ethics). *Uddeesa Thanthra* was available at the Modern Book Company at the time I visited the bookshop in February 2014. Ravana's name was given on the cover as the author of the book.

[227] The martial arts skills of the Ravana dynasty, popularly known as *angampora* and as *gassakatha heralaya* in *Vargapurnikava* are also discussed.

by the Helas for these purposes[228]. The most famous was the *Dandumonara*, the personal aircraft used by King Ravana[229]. Expertise in aviation helped Ravana and his descendants to establish the authority of the Hela dynasty across the world and within the solar system. Establishing civilizations in the Andes mountains of South America, the Caucas mountains of Southern Europe, the Kashmirian Hindukush mountains and high latitude Romania - all regions that were not accessible by land, was made possible in particular, thanks to advanced air technology. Also mentioned are Ravana's visits to outer space. Mars and Venus appear in the Ravana narrative as the two planets visited by Ravana and members of his dynasty[230]. The relatively short time taken to visit Mars, as described in the narrative, is itself an indication of the advanced state of space engineering in the era of king Ravana[231]. The narrative refers to many texts written originally in the Hela language and later translated into other ancient Indian languages that carry references to airplanes and air wars[232]. For example, the *Samarangana Suthradhara* with two hundred and thirty *slokas,* is given as a complete description of Hela *vimanas* covering the aspects of production of airplanes, take off, long distance flights, landing and other technical issues. However, the text *Vimanika Shastra* by sage Bharadvaja is extensively quoted in the contemporary discourse. Quoting from the *Vimanika Shastra,* it describes in great length the details of aviation and flying machines possessed by the Ravana dynasty, including details about airplanes, pilots, aerial routes, food to be taken during air travel, suitable clothing, metals used in manufacturing airplanes, the process of producing these metals, mirrors and their use in warfare and a variety of other related machinery[233] (Gunasekara 2013a; 2013b). Images of the *vimanas* used by the Ravana dynasty are a common sight in the Ravana related discussions held in public spaces. The most common is the image of the *Dandumonara*, the aircraft used by Ravana himself. By referring to the *Vimanika Shastra,* the Hela narrative also provides sketches of four types of aircraft, with detailed measurements; the *Shakuna*

[228] *Vimanas* or *Pushpaka Rathas* were the terms used in Vedic and Sanskrit texts, said to be originally written in the Hela language.

[229] The Ravana narrative regards the *Dandumonara*, which was run by mercury technology, as a two hundred passenger aircraft equipped with a kitchen and two toilets. The *Dandumonara* is said to have been designed by the greatest engineer of the Ravana dynasty - Maya or Vishvakarma, Ravana's father-in-law who was based in Mannar - the North Western coastal town of Sri Lanka.

[230] The construction of a pagoda on Mars and King Ravana's participation - together with some of the members of his family - in its unveiling, is mentioned in particular.

[231] The special flight he used for his regular visits to Mars is said to have taken forty six time units for a one way journey.

[232] Mentioned in particular are the *Rigveda Sanhithava, Hariwansa, Makandesa Purana, Vishnu Purana, Vickamor Vashee, Uththararama Charika, Harsha Charika, Samarangana Suthradhara, Shathapatha Brahmana* and the Tamil language *Jeevaka Chinthamani*.

[233] Descriptions cover a depth of detail to the extent of listing thirty two secrets a pilot should know, thirty one components of an aircraft, types of clothing for pilots suitable for the four seasons, sixteen varieties of metal used in the construction of an aircraft, seven sources of power used to run an aircraft, five hundred and nineteen thousand and eight hundred aviation routes in the five regions of the sky and seven types of mirrors used for aviation functions and warfare.

Vimana, *Sundara Vimana*, *Rukma Vimana* and *Tripura Vimana*. As I have observed, these minute details seem to boost the credibility of the story of Hela aviation among sections of Sinhala public, irrespective of whether these details are technically meaningful or not[234]. The word *duthaka* that appears in a few inscriptions is considered the Hela word for pilots (Gunasekara 2013b). Also provided as proof are the names of places that were said to have been used for landing Hela aircraft. Variyapola (aircraft landing port) in the North Western province and Thotupola Kanda (a mountain where the aircraft landed) in the Southern province are two such examples[235]. The Ravana narrative also provides details of cases where the advanced aeronautical engineering expertise of the Ravana era is used in recent times. Information relating to Hela aviation technology, documented and hidden in Tibetan cave temples was said to have been found by Adolf Hitler, taken to Germany and used to develop new versions of fighter planes (Gunasekara 2013a; 2013b). Kanchana Manamendra - another commentator of the Ravana narrative, writing a series of articles in 2012 on "Ravana - In Search of Hela Era" announced that a new aircraft was being produced by a Sri Lankan based entirely on Hela Vimana technology.

Helas were also considered skilled navigators, within the current narrative on Ravana. It refers to two global marine traditions established by two globally known marine universities; one in Alexandria in Egypt and the other in Kalyani in Lankapura. This great marine tradition in Heladiva is said to have been destroyed by a tsunami, only after which tank based irrigation was founded and perfected by Helas. In the narrative there are references to an inscription found in the North Western region of Sri Lanka which refers to sailors and captains of a giant shipping company *Madukasaliya Pugiyana*. Ships from Lankapura are said to be the longest and largest ships that visited Chinese ports at the time. *Vargapurnikava* refers in particular to the shipbuilding and marine skills of *Kewesastha* Yakka Wansa people who lived in the coastal belt of the island (Vimalarathana 2008; 2012).

[234] Mukunda at el (1974) investigates the historical context of the *Vimanika Shastra* and evaluates the technical feasibility of the four models *Shakuna Vimana*, *Sundara Vimana*, *Rukma Vimana* and *Tripura Vimana*. The technical evaluation concluded that none of the four models were technically feasible (within the existing paradigm of mechanical and aeronautical engineering knowledge). The paper makes a six point conclusion: none of the planes has properties capable of flying; the text describing technology and the drawings do not co-relate with each other; the drawings definitely point to a knowledge of modern machinery; the text as it stands is incomplete and ambiguous by itself and incorrect at many places; the units of speed and temperature are new and do not have any easily decipherable meaning, and; no data have been given about the weights of crafts and their components, a lapse which is very serious in the context of flying of heavier-than-air machines. However, according to the contemporary discourse on Ravana, the technology used by the Ravana dynasty was far ahead of the level of knowledge of modern aeronautical engineering and the role of *manthra* (use of human generated sound waves) in taking off, flying and landing cannot be explained using the principles of modern aeronautical engineering.

[235] The Ravana narrative refers to folklore to list towns and villages that were used to land aircrafts. Gunasekara (2013b) identifies Badulla, Monaragala, Matara, Ratnapura, Kalutara, Kurunegala and Trincomalee as districts where airports of the Ravana kingdom were located.

Tank based irrigation is considered one of the Ravana dynasty's main areas of expertise. In addition to tank based irrigation, the Hela dynasty possessed technology called *Galissa,* as per *Vargapurnikava,* to carry water underground. This network of tunnels connected the central hills where fresh water was available in abundance, with the dry zone and the coastal region. This tunnel network is said to have supplied the famous ports of the Ravana Kingdom with fresh water for ships that passed Lankapura, the island positioned on main sea routes. The Ravana narrative goes to the extent of listing the names of mathematical theories used for irrigation engineering, as if to show that the narrative is not just rhetoric[236]. King Dhathusena is said to have used this Yakka knowledge extensively in irrigation and the Jaya Ganga, an artificial river and the Kalawewa, the giant fresh water tank, are said to have been constructed using Yakka irrigation technology.

The palaces of the kings of the Ravana dynasty are considered to be advanced civil engineering constructions. The fiction "Ravana Mission" - a popular novel which contributes to the Ravana narrative gives lengthy details of the Palace of Ravana in Horton Plains, in the hilly region of the Central Province of the island (Susitha 2013). It is said that the stretch across Lankapura from North-West to East was a long line of building complexes. The Helas of the Ravana dynasty were also experts in constructing tunnels for transport and rock cutting. The narrative refers to an underground tunnel that existed from Manewa to Ritigala in the current North Central Province, joining the two yakka power centres Neelagiri and Rakungiri. References are also made to technologies used to cut giant rocks and in the construction of rock caves (Vimalarathana 2008; 2012).

The Ravana narrative claims that iron smelting, discussed in Chapter 1, was a technology practiced by the ancient Sinhalese, as a tradition continued from Yakka days. According to the narrative, Hela Yakkas were experts in iron technology and were a nation that exported iron and steel to other countries in the world. The weapons used by the Ravana dynasty were made out of iron produced in the hill country regions of Matale and Sabaragamuwa, a technology that lasted till recent times. According to Mirando Obesekara, a key commentator on the Ravana narrative, wind-powered iron smelting, the special technique used to drive the furnace using heavy wind flows available on the slopes of the central hills, was a practice founded by the Helas of the Ravana kingdom. The expertise of the Hela civilization is said

[236] *Vargapurnikava* refers to five mathematical theories; *Prakaraksheera*, *Lohithaksheera*, *Vaalamgathksheera*, *Chandrakaksheera* and *Chakradiraksheera*. In addition, *Girikanda Jala* is another mathematical method used in irrigation, architecture and general engineering according to *Vargapurnikava*. It also describes two irrigation traditions used by yakka wansa; *Rakka Vidrasana* irrigation (which includes twelve irrigation techniques) and *Airana* irrigation (which includes twenty irrigation techniques).

to have extended to areas such as mapping[237] , surveying, textile manufacturing, construction of statues, gold and silver work, etc. (Vimalarathana 2008; 2012).

However, the most sophisticated technology the Helas possessed was nuclear power. The explosion described in the Mahabharata is seen as evidence for the nuclear technology that of the Ravana people owned. A nuclear explosion is also seen as the reason for the destruction of the civilisation of the Indus River at Mohenjo-Daro and Harappa - a civilisation initiated by the Hela people of the Ravana dynasty. Providing further proof of Hela expertise in nuclear power, the levels of radioactivity in human skeletons found at the excavation sites of the Indus region were said to be similar to the levels of radioactivity found in the human remains at the sites of the Hiroshima and Nagasaki nuclear attacks. Commentators on the narrative argue that the high temperatures that resulted in the melting of buildings and walls at the Mohenjo-Daro and Harappa sites are further proof of the Hela's possession of nuclear power. Nuclear energy is also referenced as a main source of energy used for space travel (Gunasekara 2013a; 2013b).

Before moving into a discussion of the reasons for this sudden fascination among Sinhalese for a technologically sophisticated new past and on why there is an urge for a redefinition of the Sinhala nation at this moment of time, one of the main questions that guides the construction of this Chapter, I would like to briefly investigate the background within which this new scenario emerged.

The Sinhalese people were dissatisfied with the Vijaya narrative as the history of the Sinhala nation, on the one hand, and the narrative of Ravana as an alternative history was in circulation among the Sinhalese for quite some time, on the other.

4.4 The nineteenth century 'moment' of Sinhala nationalism: the Colonial 'moment'

A discussion of how the narrative of Vijaya has become the official history of the Sinhala nation seems to set a useful ground to draw parallels and to address the important question of why there is a surge of interest in Ravana right now, and to find out more about the role of engineering in the process. While it was the widely held understanding among the Sinhala public that the narrative of Vijaya provides the true account of the history of the Sinhala nation, the position of the Vijaya story as 'the' history of the Sinhala past was questioned by scholars on many fronts.

[237] It is said that the section in the *Vargapurnikava* discussing the engineering skills of the Ravana dynasty has around thirty maps.

4.4.1 Background: The scholarly debate so far

The scholarly discourse on Sinhala nationalism revolves around the central questions of when Sinhala identity as a nation began to emerge and whether there is a continuity of this identity from the past to the present, or not. This discourse is a reflection of the general debate in theorising the nation and nationalism between the two camps, the primordial and modernist. While those theorists who belong to the primordial camp argue for a nationalist consciousness that exists from pre-modern times while seeing a continuity of such consciousness from the past to the present (e.g. Anthony Smith: 1986), those who occupy the modernist camp see the emergence of nation and nationalism as a modern phenomena the world began to witness from the eighteenth and nineteenth centuries (e.g. Anderson 2006[1983]; Gellner 2009[1983]; Hobsbawm and Ranger 1983; Desai 2008). With respect to the discourse on Sinhala nationalism, the two opposing poles are represented by the two positions – seeing Sinhala nationalism as a pre-colonial phenomenon that existed from the ancient past to the present, against the view of considering Sinhala consciousness necessarily as a construct during the colonial times, especially during British rule in the nineteenth century. While appreciating the complexity of the opinions expressed by scholars of Sinhala nationalism and hence highlighting the difficulty of identifying them simply as primordialists or modernists, Rambukwella (2008) still, rather uneasily, positions them in a spectrum with Gananatha Obeyesekere, K. M. De Silva and K. N. O. Dharmadasa more or less on the primordial side and R. A. L. H. Gunawardana, Michael Roberts and John Rogers on the modernist side (pp. 12, 13). Several interesting debates have influenced the discourse on Sinhala nationalism to move beyond this simplistic binary of primordial and modern and to reach a kind of general understanding that makes the categorisation of scholars as primordials and modernists rather meaningless[238]. This is the

[238] One of the well known debates was between Gunawardana (1976; 1985a) and Dharmadasa (1992b; 1996). It started with Gunawardana's well formulated argument presented in his paper titled "The People of the Lion: The Sinhala Identity and Ideology in History and Historiography" which argued that the pre-colonial identity of Sinhalese was not static and was amended and expanded at certain stages in the pre-colonial past and that the Sinhala ideology in its contemporary form has radically refashioned the Sinhalese' view of their own history during the last century or so. By referring to additional sources not taken into consideration by Gunawardana, Dharmadasa, however, argued for an existence of a stronger consciousness of Sinhalaness for a longer duration in pre-colonial Ceylon. The impact of his response to Gunawardana seemed to have frustrated the modernist argument, as it can be seen for example, from the proposal made by Scott (1995) to abandon historiography altogether as a tool to conduct progressive politics. "I shall want to suggest that in order to carry forward the political project of "The People of the Lion" in the wake of recent criticism of it, it is at least worth raising the question whether what our Sri Lankan present demands isn't a *dehistoricised* history", says Scott (p. 13). Another contribution that facilitated a move towards a general understanding among scholars who stood on both sides of the divide was Kemper (1991). While acknowledging that Kemper's general aim is to undermine the modernist interpretations of nationalism and still appreciating Kemper's work as a sophisticated articulation of the role of pre-modern and modern ideas in Sinhala Nationalism, Rogers (1994), who is on the modern side of the debate, calls upon historians to address the issue of Sinhala nationalism with more clarity than they have done in the past (p. 12). Yet another important intervention in this debate that blurred the division

understanding that the identity formation of the Sinhalese goes back beyond colonial times to the pre-colonial era, but that the Sinhala identity underwent transformation during British rule, leading to the formation of the contemporary Sinhala identity one sees today. Whether this transformation is a radical departure from the pre-British Sinhala identity by marking a discontinuation from the past to the present (e.g. Gunawardana 1985a, p.87; Jeganathan 1995, p.107; Nissan 1989, p.64; Rogers 1990, pp. 87-92; Spencer 1990, p.5) or a change that can still traced back to the pre-British identity and hence a change that consolidated the Sinhala identity that existed before the nineteenth century (e.g. Roberts 2003, p. 93) is a matter of debate. The outcome of this debate seems to favour the theory that it is a radical departure. What made this radical change in Sinhala consciousness in the nineteenth century possible?

4.4.2 Defining the colonial 'moment' of Sinhala nationalism

This general understanding that the pre-British consciousness of the identity of the Sinhalese underwent a transformation during British rule in the nineteen century begs the question as to what happened during British rule to provoke this transformation. Juxtaposing three important phenomena, the nineteen century presents a unique moment for making possible this redefinition of Sinhalaness. The first was the translation of the *Mahavamsa* from Pali to English by elevating the *Mahavamsa* to be the authoritative text describing 'the' history of the Sinhala nation. Gunawardana (1976; 1985a) describes how this elevation of the *Mahavamsa* as the authoritative text established the main features of the history of Sinhala nation. Firstly, Vijaya was crowned as the father of the Sinhala nation by marginalising other theories that described the origins of the Sinhala (Gunawardana 1985a, p.61). Secondly, Sri Lanka is declared as the land of Buddhism and it is claimed that Buddha himself entrusted the island's destiny to the Sinhala people as guardians of his teaching (Spencer 1990, p.3). This declaration was based on the grounds that Buddha visited the island three times; the island was offered to Buddha by the original inhabitants, the Yakkas; Buddhism was brought to the island by Arhat Mahinda and the links between the leadership of the Sinhala nation to Buddha himself (Gunawardana 1976, pp. 53-62). In its translation from Pali to English by George Turnour, the *Mahavamsa* is said to have undergone a set of

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between primordialists and modernists was by Roberts. Roberts argued against the position of Anderson to treat print capitalism as an essential pre-condition for nationalism. Roberts proposed to replace print media by media (different forms of media) as the pre-condition to form nations. By taking examples from pre-colonial modes of communication (e.g. written forms of cultural transmission pre-dated print technology, verbal communication, visual communication, etc.) as important and effective modes of communication within the Sri Lankan context Roberts argued for a case that suggested the presence of nationalism in pre-colonial Ceylon (Roberts 2001; 2003; 2014a; 2014b).

violent transformations that laid the foundation of the current form of the Sinhala consciousness (Jeganathan 1995, p.113). The second important phenomena that allowed the redefinition of Sinhalaness in the nineteen century was the introduction of the language category, 'Aryan languages' that was soon extended to identify races as 'Aryan races'[239]. The Sinhala language was grouped under the category of Aryan languages, thus making way to describe the Sinhalese as an Aryan race (Gunawardana 1985a, pp.87-93). The *Mahavamsa* story was then interpreted as the story of the Aryan arrival in the island. The discovery of ruins by colonial archaeologists in Anuradhapura and Polonnaruwa was the third phenomena that made the nineteen century a decisive moment. It consolidated the *Mahavamsa* narrative and supported the theory that the Sinhalese were inheritors of a great civilisation governed by Buddhist values.

4.4.2.1 The Mahavamsa

The *Mahavamsa*, a work in Pali written by Buddhist monks from the sixth century onwards, is still considered the national chronicle, carrying the official history of the island. The text, originally authored by the monk Mahanama who represented the Maha Vihara, one of Anuradhapura's monastic establishments, was updated in the thirteenth, fourteenth and eighteenth centuries. It provides the basis for an understanding of an unbroken national past from the time of the Buddha in the fifth century BC, to the fourth century AD (Nissan 1989, p.66; Rogers 1994, p.12; Spencer 1990, p.5). However, the *Mahavamsa* received colonial attention and was read with renewed interest when it was translated in 1837 by George Turnour. The hegemonic status received by the *Mahavamsa* in the nineteenth century as an authoritative, positivist and historical text, brought the Vijaya myth to the forefront as the narrative describing the origin of the Sinhala nation (Gunawardana 1985a, p. 61; Jaganathan and Smail 1995, p. 6). Turnour's translation of the *Mahavamsa* was the second translation of that text to be published. The first was by Edward Upham in 1833 whose version was discredited because of significant lapses and distortions in the translation, due to his lack of knowledge of Sinhala and Pali and for his reliance on native interpreters. Turnour's translation in contrast, claimed greater authority because he accessed the text in original form (Rambukwella 2008, p.35). Walters and Colley (2006) pay attention to the significant role that could have been played by monk-scholars in the nineteenth century process of translating the *Mahavamsa,* in providing both Upham and Turnour with copies of *Mahavamsa*, a

[239] Max Muller is the nineteenth century philologist and orientalist, whose name appears prominently in initial studies of Indo-European language category and the spread of racial category, Aryan. If the Aryan theory found an influential supporter in Hegel, in Max Muller it found its most effective propagandist, according to Gunawardana (1985a, p. 87).

commentary of the *Mahavamsa* and a range of other Sinhala histories and by teaching them how to read and interpret the texts they provided (pp.158-160). Walters and Colley speculate on a series of conditions under which Turnour's *Mahavamsa* became the authoritative history of the Sinhala nation.

> "If Upham's translation had been "better" by the standards Turnour promulgated - if his Mahavamsa had been a literal and complete (and unembellished) rendering of the Pali; if those monks had known they would later be held to Orientalist standards for "translation" of Mahavamsa; if any of the editors had possessed the necessary linguistic skills - Turnour never would have had to take the task upon his shoulders and the open, dialogical historiography which the monks first presented might never have been so utterly rejected in favour of the authority of a fixed, dead and thoroughly dissected Mahavamsa text in Pali" (Walters and Colley 2006, p. 166).

Jeganathan (1995) describes how Turnour's translation of the *Mahavamsa* qualified the 'regime of truth' of the nineteen century historiography, in a South Asian context where other history texts were disqualified from being considered as 'authentic historical accounts' and instead regarded as a historical fiction. Turnour's *Mahavamsa* suited the nineteenth century positivistic historiography where proper history was expected to remain within the boundaries of scientific knowledge without getting mixed up with 'fantastic miracles', to flow continuously from the 'past' to the 'present' and to progress from 'barbarism' to 'civilisation' or vice versa (pp. 110-111).

4.4.2.2 The theory of Aryan race

Language became an important category in colonial discourse in the nineteenth century, with the development of comparative linguistics and its use in defining racial categories. The positioning of the Sinhala language in a separate category of Indo-Aryan languages away from the category of Dravidian languages within which the Tamil language is located, made it easier to confirm ethnic difference between the two communities, Sinhalese and Tamils and to map the categories of Sinhalese and Tamils remarkably easily onto the chronicle history of *Mahavamsa* (Nissan 1989, p. 69; Rogers 1994, p.16). Gunawardana (1985a) provides a detailed account of how the theory of the Aryan race evolved in Europe and how these developments influenced the transformation of the Sinhala consciousness in the island[240]. Even though there were conflicting opinions among scholars during the first half of the

[240] The invention of the Aryan race in the nineteenth century and how it has impacted Indian history have been discussed widely. The contributions made by scholars such as Romila Thapar, Thomas Trautmann, etc. can be mentioned in particular. Thapar (1996), in her paper "The Theory of Aryan Race and India", while discussing how the theory of Aryan race has shaped Indian history and politics, also deliberates how the Aryan and the non-Aryan were segregated through the instituting of caste (how brahmanas of modern times were said to be of Aryan descent and the lower castes and untouchables and tribes were

nineteen century, the Aryan origin of the Sinhalese gained wide popularity as a theory from about the end of nineteenth century. It provided Sinhala nationalism with a prestigious pedigree by elevating the Sinhalese to the rank of their rulers, the British (Ibid, pp. 89-91). With the marriage of Aryan theory with the narrative of the *Mahavamsa*, Vijaya's arrival came to both represent and prove the historical 'fact' that the Sinhalese originated from Aryan migration from North India and that the Sinhalese as a whole (Aryans) are opposed to Tamils (Dravidians) in absolute terms historically (Nissan 1989; p.69).

4.4.2.3 Discovery of ruins

The discovery of ruins gave the *Mahavamsa* narrative plausibility as the true history of the Sinhala nation. The two clusters of ruins, irrigation works consisting of interconnected systems of reservoirs and civil and religious constructions, located mainly in the North Central Province[241] of the island, attracted the attention of colonial officers. These ruins represented the golden era of the *Mahavamsa* story and provided proof of an advanced Aryan civilization of the Sinhalese (Jeganathan 1995, p. 120; Nissan 1989, p. 69). Anuradhapura, the centre of Sinhala civilisation according to the narrative of the *Mahavamsa*, continues to remain the place of pride for Sinhala nationalism. Nissan (1989) describes in detail how Anuradhapura was reinvented by colonial and post-colonial archeology from the time it attracted the colonial gaze in the early nineteen century, to the time it was rearranged as the Sacred City and the New Town, in line with the movement of Sinhala nationalism (pp. 66-67). Jeganathan (1995) goes on to address the colonial psyche of dealing with Anuradhapura which ultimately was "unjungled, measured, marked, sanitized and aesthetisized" and made ready for large scale consumption and tourism, facilitating the construction of the Sinhala consciousness in the nineteenth century[242] (p.127).

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descended from Dasas) and how this view was gradually discarded when there was evidence to the contrary. While delivering a lecture at the Academic Staff College of the JNU on the title “The Aryan Question Revisited”, Thapar (1999) suggests to historians that “it is time now that we moved away from this century and a half old obsession with who were the Aryans, what was their origin, how do we identify them, who has descended from them”. In his landmark study, “Aryans and British India”, Thomas Trautmann (1997) too examines how the idea of Aryan race was evolved, how it took hold of the minds of the Indian people and how Indo-European or Aryan ideas, based on the principle of linguistic kinship, dominated British ethnological inquiry.

[241] The region was known as Nuwarakalaviya before it was identified as the North-Central Province (Jeganathan 1995, p. 118).

[242] A similar line of argument of how archaeological ruins facilitated a process of reconstructing the past can be found in relation to India as well. For example Guha-Thakurta (2004) in her book “Monuments, Objects, Histories: Institution of Art in Colonial and Post-Colonial India” looks at the process of constructing of lost pasts of India by mobilizing imagination of Indian people around monuments, archaeological relics and art objects.

4.4.3 The Sinhala nation in the face of scholarly challenge

Even though the scholarly discourse described above was powerless to unsettle the widespread narrative of Sinhala identity in the political, journalistic and popular spheres, it was certainly instrumental in dislodging from its hegemonic position the identity constructed in the nineteenth century 'moment' in the sphere of scholarship. The *Mahavamsa*, which was considered 'the' authoritative history of the Sinhalese, was repositioned as another narrative among many others, as a result of this line of scholarly interventions made since publications by the historian G. C. Mendis as way back as in 1930s (Mendis 1932; 1966; 1996). The exposure of the power politics at play during the time the text *Mahavamsa* was written and rewritten and then during the nineteenth century when the *Mahavamsa* was elevated to its status as the most important document, contributed to the relocation of the status of *Mahavamsa* in the sphere of scholarship. Though this scholarly discourse does not deny that the ruins discovered during the nineteenth century point towards the existence of an advanced civilization in the island, the use of them as evidence in the story of Sinhala identity formulated in the nineteenth century was challenged. 'Facts' that were presented as evidence of the history of a Sinhala-Buddhist nation as narrated during the nineteenth century were redefined by this scholarly discourse, as assumptions or myths. The literature in general refers to two main myths; the Vijaya myth where Sinhalese were considered to be descendants of the Aryan Prince Vijaya and the myth of the Sinhalese being nominated guardians of Buddhism. Dewasiri (2012) writing on myths sees that the constructed history of Sri Lanka is situated on five main pillars that are of a mythical nature; the myth of Buddha visiting Sri Lanka, the myth of the arrival of Vijaya, the myth of Pandukabhaya[243] (the myth that the island's kingship is related to Buddha), the myth of Buddhism being brought to the island by Mahinda, and the myth of Dutugemunu[244] (the myth that the island was saved from Tamils and was united under a single rule). Rogers (1990) also refers to a series of assumptions based on which Sinhala nationalism was situated; the great Sinhala civilization in ancient times, the great and unbroken Sinhala past, the

[243] Mahavamsa describes Pandukabhaya, the first monarch of the Anuradhapura Kingdom, as a descendant through both his mother and father, of Amitodana, the youngest brother of Suddhodana and the uncle of Buddha. According to the Pandukabhaya myth the kings of the dynasty that Pandukabhaya founded were not only Sakya princes but also descendants of the sole surviving member of the Sakya clan and hence the legitimate heirs of the island Buddha was donated by Yakkas (Gunawardana 1976, p.59).

[244] The famous war between Dutugemunu hailing from the Kingdom of Rohana from the South of Sri Lanka and Elara, the elderly king of the Northern Kingdom, is recorded in *Mahavamsa* as the moment that brought the island under a single political authority. Dutugemunu ruled the island thereafter (161-137 BC) and the capital Anuradhapura emerged as an important urban centre that preceded the establishment of the island kingdom (De Silva 2005, pp.16-17).

continuous antagonism between Sinhalese and Tamils throughout the island, the Sinhalese as Aryan descendants and Sri Lanka being an idyllic land with Buddhism as the guiding light of the Sinhala people.

The entry of the Ravana narrative in a big way in the early twenty first century to this rather complex scene of Sinhala nationalism seems to complicate things further. The Ravana narrative can easily be classified as a grander myth compared to the myth of Sinhala nationalism of the nineteenth and the twentieth centuries; a myth that was backed by the nineteenth century translation of the *Mahavamsa*. The narrative of Ravana while being a myth of grand scale responds positively to the challenges posed by the scholarly critique of the Mahavamsa-based Sinhala nationalism. It discards the Vijaya myth, the Aryan myth (by referring to a *Yakka* origin of Sinhala nation) and the myth that Arhat Mahinda brought Buddhism to the island decades after the death of the Buddha (by referring to the existence of Buddhism in the island well before the arrival of Arhat Mahinda). In fact it stands with the Abhayagiri tradition (Mahayana tradition) in opposition to the Mahavihara tradition (Theravada tradition) in which the *Mahavamsa* was authored by Mahanama. What was it that made possible this current surge of unprecedented interest in Ravana? What influenced the reappearance of Ravana-based Hela discourse in a big way in the early twenty first century? How is it possible to explain the mass scale attraction of this discourse for the Sinhala nation to revisit their memories of *Mahavamsa*-based glorious past for a past that is even more fabulous on the basis of its technological advancement?

4.5 The early twenty-first century 'moment' of Sinhala nationalism: the Ravana 'moment'

Will it be possible to identify the twenty first century 'moment', the Ravana moment, that takes the Sinhala nation through another process of redefinition, in the same way that the nineteenth century 'moment' of redefining Sinhala nation was caused by the superimposition of factors such as Turnour's translation of the Mahavamsa, the invention of Aryan theory and the discovery of ruins in Anuradhapura and Polonnaruwa? What is the role of engineering in defining this early twenty first century Ravana moment? What follows is an attempt to treat the current Ravana surge within the Sinhala community in a broader sociopolitical context, in search of answers to at least a few of the questions posed above.

4.5.1 Ravana – the story so far

Identifying the Sinhalese as descendants of Ravana and thereby challenging the hegemonic narrative of *Mahavamsa*, is a theory that was in circulation among the Sinhalese for quite some time (Seneviratne 2012, p. 47). Even though the exact origin of the Ravana narrative as a history of the Sinhala nation is not known and is an area that needs further investigation, one can come across instances where Ravana

existed as a Sinhala king in Sinhala consciousness. *Ravana Rajavaliya,* one of the Sinhala language palm leaf manuscripts depicting the political and social life of Kandyan and Kotte Kingdoms during the fifteenth to eighteenth centuries, provides a series of anecdotal references to King Ravana and deals with connections between Ravana and various provinces and places in Sri Lanka. As a reference identified by Obeyesekere as an "intermediate text", a text that can be placed between folk tradition and the classical tradition of texts written by Buddhist monks and lay scholars, the *Ravana Rajavaliya* can be seen as one of the best proofs for the spread of the Ravana narrative among ordinary people, in previous centuries. Interestingly, the *Ravana Rajavaliya* labels the pre-Vijaya history as the era of King Ravana, the powerful and evil king who extended his power even beyond the planet earth (Obeyesekere and Kumara 2005). While ordinary Sinhalese' understanding of Ravana as a Sinhala king can therefore be traced back even to pre-colonial times, the portrayal of him as a righteous ruler and not as a villain as depicted in the Ramayana seems to occur rather later. *Lak Mini Kirula*, a Sinhala newspaper launched in the early 1880s referred to Lanka in its 1st June 1881 edition as a powerful kingdom even prior to the advent of Vijaya and claimed that Ravana ruled Heladiva in about 2837BC, more than 2000 years before the arrival of Vijaya (Dharmadasa 1992a, pp. 119-120; Wickramasinghe 2014a, p.95).

The most prominent intervention to establish the Ravana theory as the history of Sinhala nation was by members of the Hela Havula (Community of Helas) movement that started in the early part of the twentieth century. Munidasa Cumaratunga initiated the movement during the 1930s and 40s to reform and purify the main local language, Sinhala, from the influences mainly of Sanskrit and Pali, was the pioneer in referring to an independently evolved Sinhala civilization away from the influence of the North Indian Aryans[245]. The term Hela was used to refer to the Sinhala language that was spoken by people living in Heladiva (Coperahewa 2012). Editorials of *Lak Mini Pahana* on 18th September and 23rd October, 1934, editorials written by Munidasa Cumaratunga, refer to the great king Ravana and the great Hela dynasty led by the Ravana lineage (Cumaratunga 2006). In the well known poem *Wawuluwa* [Bat Language] written in 1939 by Rapiyel Tennakoon, another leading figure of the Hela Havula Movement, the Sri Lankan characters in the Ramayana, Ravana and his sister Suparnaka, were portrayed in a positive light. In contrast to how she is portrayed in the Ramayana, Suparnaka is described as a beautiful and friendly woman. Sita, the wife of King Rama, who was kidnapped by Ravana according to the Ramayana, is portrayed as dreaming of going to Sri Lanka to meet Ravana, the great king of Sri Lanka

[245] Activities of the Sinhala language purification movement started much earlier than the formal establishment of the Hela Havula in 1941 which represented a strong opinion against those who proposed steps to adopt the equivalent of the spoken idiom for literary purposes (Dharmadasa 1977).

who protected her during her stay in the island (Field 2012). The popular song *Lanka Lanka Pembara Lanka* [Lanka, beloved Lanka] sung by the famous singer Sunil Shantha and written by the popular song writer Arisen Ahubudu who were prominent members of Hela Havula movement, refers to Bali, Taru and Ravana, the powerful kings of the lineage of Hela dynasty. Alaw Isi Sebi Hela is another prominent Hela Havula member who promoted the theory of a pre-*Mahawamsa* Hela civilization (Dewasiri 2011). The stage drama *Sakvithi Ravana* which was produced in the 1980s, was another contribution by Arisen Ahubudu which portrays king Ravana as the hero of the Rama-Ravana story. Writing a preface to the script of the drama, Ahubudu identifies 2554-2517 BC as the time during which Ravana ruled Lankapura (Ahubudu 2007). The relatively influential and widespread Hela Havula community, represented significantly by members of the Sinhala speaking middle class - specially from among school teachers, principals, notaries and Buddhist monks - were at the forefront of the radical social change of 1956 that made Sinhala nationalism a decisive factor in national politics (Coperahewa 2012; Dharmadasa 1974; Dharmadasa 1977).

I came across two more instances where the great Ravana dynasty was referenced in the mid twentieth century. In introducing the history of ancient Sinhala medical practice, the report of the committee appointed in 1950 by the Ceylonese Government to look into the status of traditional Sinhala healthcare systems provides a detailed description of how Sinhala medical practice originated in Ceylon (Committee Report on Ancient Sinhala Medical Practice 1950). According to the report it was developed first by the Asuras who were the initial inhabitants of the country. This knowledge was then transferred to the Yakkas (or Rakshas) who ruled the country after Asuras and developed an advanced civilization in Ceylon. Ravana's family was credited with further developing the Sinhala medical practice in the report. Evidence of the presence of Ravana in the collective public memory in the mid twentieth century can also be found in the work of Beligalla (1995). As a young journalist he documents, the notes of Leonard Woolf's[246] visit to the island in 1960, which Woolf undertook after fifty years of his retirement as a government servant of British-ruled Ceylon. These notes cover Woolf's visit to Hambanthota in 1960, the Southern-most part of the island where he served as an Assistant Government Agent before his retirement. The visit was made in the company of Beligalla and the provincial revenue officer of the region, a person called Vithanachchi who was known to Woolf from the days he served as an Assistant Government Agent. In the notes taken by the young Beligalla during the visit in 1960, the name Ravana

[246] Leonard Woolf served in Ceylon as a civil servant from 1904 to 1911. Woolf published a series of books after moving back to England at the end of his retirement and his first novel "The village in the jungle" which depicted the difficult lives of Ceylonese peasants during colonial times became famous specially among Sinhalese.

appears often, in dialogues that took place between Woolf and Vithanachchi. References are made by Vithanachchi to Hambanthota as the kingdom of Ravana and to various places in the Hambanthota region as important landmarks of Ravana's reign. Relating the story to Woolf, Usangoda is identified by Vithanachchi as the place where Ravana's palace was located, Velipatanvila as the place where his personal aircraft used to land and Abarana Ella as the waterfall at which the princesses of Ravana's harem committed suicide after Ravana lost the war with Rama. There is mention of Mangara, the Minister of Agriculture of the Ravana dynasty who ruled some of the places Woolf and the team visited and under whose name a temple is now built to worship God Mangara. In his description to Woolf, Vithanachchi estimates that the civilisation of the Ravana dynasty may be older than ten thousand years[247]. Within my own extended family, as a teenager I recall hearing stories of Ravana as the great emperor of the Sinhala nation[248]. It was a case of young family members listening to and accommodating the story of Ravana at home, while learning the narrative of *Mahavamsa* at school.

The Hela Havula's attempt to establish the narrative of Ravana as the history of Sinhala nation was the most significant intervention yet it was less effective, and this is a question worthy of attention. Various scholars have expressed their opinions as to why the language purification movement of Hela Havula failed in general to receive wider acceptance in the country. According to Wickramasinghe (2014a) the Hela theory was perhaps too literary and complex to enter popular public space (p.96). The Rama-Sita-Ravana myth did not give Ravana, who stole Rama's wife according to still widespread belief, a persona that people could easily identify with, except within a few pockets in the island where the Hela Havula influence was strong. Another important factor that was disadvantageous to the Hela theory's attempt to capture public imagination at large was its head-on-clash with the power elite of Sinhala society, who acted as a barrier preventing Hela theory's access to the public imagination (Coperahewa 2012). The proposal for the ultra-puristic archaic usage as the standard for written purposes could also have run counter to the populist spirit of the times (Dharmadasa 1977). The fact that the membership of Hela Havula were primarily from a lower caste, *Durava*, the caste of toddy tappers, in a society that was caste hierarchical at the time (Field 2012) may have been another factor that acted against them, in their

[247] As a person living in the South of the island, the possibility of Vithanachchi being influenced by the Hela Havula discourse which was also initiated in the Southern coastal belt and might have been in circulation since the early part of the twentieth century in the region, cannot be negated. One can also argue that the folklore on Ravana in circulation may have generated interest in Cumaratunga to propose the Ravana narrative as the history of Sri Lanka.

[248] Here again the presence of Ravana in my family memory can be a result of the Hela Havula intervention, through which my parents who were from the South were influenced or as a result of the fact that the Ravana narrative was always there in public memory, at least in the Southern region.

attempt to redefine the Sinhala nation differently from the political elite who were from the traditionally elite *Govigama* caste and especially the *Karava* caste that joined the elite bandwagon during the time of colonial rule (Jayawardena 2007; Roberts 2007).

The early twenty-first century discourse on Ravana contains new features compared to the previous version described above. While the aspect of the engineering excellence of the Hela people remains the most prominent, there are a few more interesting features worthy of one's attention for a discussion to address the question of why the Ravana 'moment' is now and why not before.

4.5.2 Other features of the Ravana narrative[249]

The current narrative on Ravana contains several features outside the frame of engineering that can also be used to better describe the twenty-first century moment of redefining Sinhala nationalism. Three such features, the special place occupied by women in the Ravana narrative, the relationship the Ravana dynasty had with the Abhayagiri tradition of Buddhism and the regular links the narrative establishes with the contemporary politics of the island, are briefly discussed below. While the prominent role played by women and the relationship with Abhayagiri tradition are discussed in detail in *Vargapurnikava* and reproduced elsewhere, the link that the narrative maintains with the Rajapakse regime appears at regular intervals in songs and fiction.

4.5.2.1 The role of women

The special role played by women in the Ravana narrative is in contrast to the usual portrayal of women in national discourses in general, according to which women are seen to play inferior roles in a society led by men or to play womanly roles in a world where the gender division of labour is clear cut[250]. Women in the Ravana tradition played a prominent role, arguably even more so than men according to the *Vargapurnikava*[251]. This is also an interesting departure from the narrative of the *Mahavamsa* where the role of women does not go beyond the stereotypical performance of duties. *Vargapurnikava* is full of examples of women's achievements. Women ruled yakka kingdoms and commanded fighting

[249] Details of this section were based on the references mentioned in this section as well as on numerous sources mentioned in the section, "Ravana surge in public space", that is reproduced again and again in all forms of communication.

[250] Conducting a discussion on the different participation of various social groups, Yuval-Davis (1997) identifies a series of typical roles played by women in nationalist narratives; as mistresses of conquerors, wartime rape victims, military prostitutes or as wives, girlfriends, and daughters waiting dutifully at home. Chatterjee (1986) who divides the Asian nationalist thought into two worlds - outside material world and inner spiritual world, positions women in the inner domain where the spiritual dimension of national culture is safeguarded.

[251] Commentaries of *Vargapurnikava* by Vimalarathana (2008; 2012) provide descriptions of the wide-ranging role played by women in the Yakka dynasty.

forces[252]. Women were involved at all levels of administration and held posts in *maha sabas* and *variga sabas*, forums at the higher and lower levels of society. Female education was not discouraged and *Vargapurnikava* provides examples of famous female doctors during the Ravana times[253]. References are made to several volumes of *Yakka* laws that were introduced by the princesses of the Ravana dynasty[254] . There are a few famous *Sandeeshas* (poetry sent through a messenger from a place to another place describing the important landmarks of the route, histories and scenic beauty) written by Yakka women, an activity traditionally conducted by male intellectuals[255]. Women were equally involved with the local martial art, *angampora*.

Yakka women were at the forefront of spiritual achievement. According to the Ravana narrative, Queen Kavilaashapali, a prominent queen of the Ravana tradition, is the first Sri Lankan to attain the first stage of enlightenment, Sovanhood, even before she heard the dhamma from the Buddha who visited Sri Lanka later, on her invitation. After listening to the Buddha Kavilaashapali attained Arhathood, the final stage of enlightenment. *Vargapurnikava* refers to a long list of Bikkhunis who represented the Ravishalyasha tradition[256]. Added to the list of achievements by Kavilaashapali are the introduction of the meditation method *Aamaanya* and of the new text, *Kataara Dehen Naari Vilooka Vishakumbana Sutta*. Princess Kashividipali, a sage and the twin sister of Kavilaashapali, is said to have found the

[252] Princess Mahapali (i.e. Kuveni in the Vijaya narrative, the Yakka woman who met Prince Vijaya when he landed on the island for the first time) was the ruler of Giri (i.e. Ritigala mountains in the North Central Province) and the Neelagiri regions (i.e. Manewa region in the North Central Province) and is said to have commanded a force consisting of ten divisions with varying expertise. Another prominent woman often mentioned in the Ravana tradition is the Yakka Queen of King Mahanama, Siri Mega Swarnapali (or Rathnapali). According to *Vargapurnikava,* she organized Yakka forces to defeat the forces of the Tamil invader Urdhulaan Neelaweeludu, invited him for a duel and killed him. She saved the Dambulla caves from enemy forces and attacked them when they set fire to the important library of Yakka knowledge, the Munamura Cave. After the death of King Mahanama, Rathnapali became the ruler of Neelagiri a fact, according to the Ravana narrative, not mentioned in the *Mahavamsa*. As a mark of respect for her bravery the Vedda people of Lankapura identified her as Queen of Neelagiri (Vimalarathana 2008). References are also made to Yakka Princess Piumapali Kirimenika who received the honorary tile "Rajakaruna" from the King Rajasinghe. She received this honour for the heroic act of taking into custody alive the barbaric Dutchman Kappali Jadhi and handing him over to the King. This declaration of honour is still said to be protected at the National Museum of Sri Lanka (Ibid).

[253] Particularly mentioned are the names of Princesses Mahapali and Uththarapali (Vimalarathana 2008).

[254] Princesses Kavilashapali, Siri Mega Rathnapali and Kirimenika Piumapali are considered experts in Yakka law.

[255] Rakka Mahila Sandeshaya with three hundred poems was written by the Yakka Bikkhuni Sangikapali and sent from Sangika Mehenawara to Bikkhuni Suwakasardha of the Naga tribe who was living in Ritigalapav Mehenawara (Vimalarathana 2008).

[256] The names of Bikkunis Kavilashaali, Suvipalpali, Thambaranujapali, Solidhipali, Kaushadipali, Sudhapali, Suparnipali, Maldineepali, Badramaneepali, Kadhagiripali, Nisardhapali, Gothameepali, Baddhakachchayanapali, Susankapali, Suvasangikapali and Uththarapali are mentioned.

meditation method *sades dehen*. The strong presence of women in Yakka Buddhist institution was marked by the existence a number of monasteries specially allocated for Bikkunis[257].

4.5.2.2 Abhayagiri tradition of Buddhism

The Ravana narrative is influenced by *Vargapurnikava* and stands with the Abhayagiri tradition of Buddhism, which is the other major Buddhist fraternity in ancient Sri Lanka, besides the Mahavihara. While the Abhayagiri tradition represented the Mahayana school of Buddhism, Mahavihara represented the Theravada school. The prominence of Abhayagiri was, however, suppressed as a result of the rivalry it had with Mahavihara and the role played by the powerful Mahavihara in documenting Sri Lankan history through the *Mahavamsa*. The longer history of Buddhism in the island and the pioneering role of the female bikkhu tradition suggested by the Ravana narrative, contradict the *Mahavamsa* narrative of Buddhist history in which Buddhism was said to have been introduced for the first time to Sri Lanka by Arhat Mahinda nearly two hundred and fifty years after the death of the Buddha. The Ravana narrative does not deny Arhat Mahinda's missionary visit and identifies it as the origin of the Mahavihara, the new Aryan influenced bikkhu tradition that was established in parallel to the existing Yakka bikkhu tradition. The latter was later known as the Abhayagiri tradition, as a result of the construction of the Abhayagiri monastery, to facilitate the continuity of the *Yakka* bikkhus community[258]. Bikkhus from Mahavihara were said to have read Buddhist literature in the custodianship of the *Yakka* Bikkhu tradition, debated the content, rejected its validity and set piles of *Yakka* Buddhist literature on fire. The *Vargapurnikava* differentiates teaching at the Abhayagiri school from the more traditional material taught at the Mahavihara school. Within the Abhayagiri tradition as described in the *Vargapurnikava*, medical science, astrology, logic and irrigation engineering were taught along with Buddhist philosophy[259]. While Mahavihara remained the most powerful Buddhist monastery of ancient Sri Lanka, Abhayagiri is said to have received state patronage during the times of Kings Walagamba, Mahasen, Buddadasa and

[257] *Vargapurnikava* mentions a list of famous temples allocated for Bikkhunis; Yashodara Mehenawara (also known as Mahapali Mehenawara), Neelagiri Mehenawara, Mukthalatha Mehenawara (also known as Ratnawali Mehenawara) and Sangika Mehenawara.

[258] The Abhayagiri monastery is said to have been established in 1 BCE, two centuries after the establishment of Mahavihara by King Vattagamini Abhaya who constructed and offered Abhayagiri to Thera Mahatissa (Chandawimala 2013).

[259] Research paints a somewhat parallel picture about Abhayagiri. By conducting a comprehensive study of the Abhayagiri Fraternity Chandawimala (2013) identifies Abhayagiri as an institution that always welcomed new ideas and adjusted its monastic system in accordance with the time and the socio-religious needs of society. Abhayagiri is considered by Chandawimala to be radical and innovative and maintained foreign relations with India, China and Java and with Mahayana and Tantric Buddhism, whereas the Mahavihara was traditional and conservative.

Mahanama, who were related to the Ravana dynasty in some way or the other (Vimalarathana 2008; 2012).

4.5.2.3 Links with the regime of Mahinda Rajapakse

During the process of construction, the Ravana narrative establishes frequent links with contemporary Sinhala nationalism, which was at a peak during recent times during the rule of Mahinda Rajapakse (2005-2015) that led the nationalist drive, along with the war conducted against the Liberation Tigers of Tamil Eelam (LTTE). Prominent commentators of the Ravana narrative, in general supported the war conducted by Mahinda Rajapakse's regime against the LTTE. Songs composed by the group Ravana Brothers on the greatness of King Ravana and his aviation capabilities display images of the Sri Lankan army and air force in action against the LTTE. The Sri Lankan forces are often referred to as Ravana forces. The novel "Ravana Mission" which was printed four times during a two year period from 2011 to 2013, is an interesting case in point. In a dramatic unfolding of the events of a single night involving the NASA, the US air force, hackers working for the Sri Lankan military intelligence, media personnel, archeologists, historians and the Sri Lankan armed forces, it links the glorious past of the Ravana dynasty with the regime of Mahinda Rajapakse and identifies the regime and especially the Secretary of the Ministry of Defense who is also the younger brother of President Rajapakse who provided political leadership for the war against the LTTE, as the custodians of the Hela *Asura* nation[260].

4.5.3 Defining the Ravana 'moment' of Sinhala nationalism

Even though it doesn't explain the sudden popularity of the Ravana narrative at this moment, the desire of the Sinhala nation for its own independent story of the past - the ownership of which cannot be claimed by others, was present at least during the last century. The *Mahavamsa* story had its advantages that suited the conditions of the nineteenth century and to some extent the twentieth century. It helped the Sinhala nation to claim Aryan status and sit at equal level with its colonial masters.

[260] The story begins with the accidental discovery of the palace of King Ravana. The Sri Lankan military, led by the Secretary to the Ministry of Defence, realises the global importance of the site and is on a mission against time to save the palace before the US air force launches an air strike. An archaeologist, a historian and journalist are virtually kidnapped by the armed forces and airlifted to the mountains where the site is located, with a two-hour deadline to reveal the secrets of the palace before the US Air Forces's fighter planes arrive over the island. Over the next two hours the two professors and the journalist discuss what they see inside the underground palace: the history of the "Surya Vansaya" that civilised and ruled the entire world ten thousand years ago. They find this history in the library of the palace, written on plates of gold. Within the discussion Hela is seen as the origin and the centre of the world and the Hela nation as a technologically advanced community of people who used aeroplanes to travel around the world and used nuclear weapons in war. In a last-minute discussion with the Secretary to the Ministry of Defence the journalist starts to live telecast the important news from the site, forcing the Americans who learn about the telecast, to abandon their mission to attack the palace of Ravana (Susitha 2013).

By establishing a direct channel with North India it helped the Sinhalese to keep South India at a distance and to create separate evolutionary paths for the Sinhalese and Tamils which otherwise would have placed the claims by the Sinhalese for sole possession of the island at risk[261]. However, life under the shadow of the giant neighbour was not always a pleasant experience. The *Mahavamsa* narrative is a constant reminder of the dependency of the Sinhala nation on India. This need of the Sinhala nation to keep India at a distance is best described by Spencer (2014) when he says "something is missing in many maps of Sri Lanka. If it isn't missing it is simply reduced, faded and played down. That something is India". Antagonism with India is also a regular feature of Sinhala nationalism. Anti-Indian sentiments against the Indian migrants ran high during the mid 1930s, a period of economic depression in the country. Indian workers were seen as competitors for job opportunities that were scarce (Wickramasinghe 2014a, p.127). Granting citizenship to South Indian Tamils who were brought to the island mass scale by the British to work in the plantations, led to a conflict between the Indian and the Sri Lankan governments igniting anti-Indian sentiments once again. While the Nehru government wanted the Indian workers to settle in Sri Lanka on the basis of their contribution to the economy and their long settlement in the island, the Sri Lankan government took steps to pass the Citizenship Act in 1948, disqualifying a majority of Indian Tamils from citizenship. The long-drawn friction between the two governments on this issue was ultimately settled in the 1960s with some people of Indian origin receiving Sri Lankan citizenship and the Indians agreeing to accept the rest (Kanapathipillai 2009, pp. 68; Wickramasinghe 2014a, p.179). The fear of Indian expansionism, however, was a major cause of concern. By the time of independence Ceylonese political leadership was worried that India would replace the British as masters of the island and that India would use Indian Tamil workers as the avenue for interference (Kanapathipillai 2009, p. 69, Samaraweera 1981, p. 157). Indian expansionism was one of the key theories around which the Janatha Vimukthi Peramuna (JVP), one of the radical left-wing parties, mobilised youth in the South to rebel against the central government of Sri Lanka in 1971 (Alles 1976). Anti-Indian opinion of Sinhalese was at its peak during the 1980s, firstly as a result of Indian training provided to Tamil militants who led an armed struggle against the Sinhalese government in the North, and then on the account of forcing the Colombo government to sign a peace accord with India,

[261] *Yakkas*, the community King Ravana belongs to, can itself be a problematic unit unless India and especially South India is not kept at a distance and forgotten, as the presence of India could reinforce the claim by the Tamils to Ravana as a Tamil king who ruled Lankapura (Coomaraswamy 1986). Anagarika Dharmapala, the vigorous campaigner of Sinhala nationalism in the early 20th century, too identified Yakkas as a tribe related to Tamils while appraising the Aryan origin of Sinhalese (Dewasiri 2011).

which resulted in India sending their forces to the island as peace-keepers to maintain peace between the Sri Lankan armed forces and the LTTE.

Discursively speaking, attempts have been made in the past to break away from India. The Hela Havula movement played a prominent role, as described above, in establishing the Hela nation, the Sinhala language and Sinhala music as an independently evolved community and with unique traditions, by indicating a history that goes well beyond the narrative of the *Mahavamsa* (Coperahewa 2012; Cumaratunga 2006). Cumaratunga portrayed Hela civilization as a centre of global civilization and sought to remove both North and South Indian influences in the Sinhala language by getting rid of Sanskrit, Pali and Tamil loanwords. The well-known singer Sunil Shantha who became the symbol of the Hela music tradition, used Western musical influences to fashion a modern Sinhala national music that was not North Indian. Cumaratunga went to the extent of bestowing new Sinhala language names on the standard Indian terms for musical notes (Field 2012; 2014). Science and technology are recent additions to this list of traditions that are 'rescued' from Indian influence. The initial signs of this trend could be found in the *Jathika Chinthana* [national thinking] discourse led by Nalin de Silva. *Jathika Chinthana* can be described as a movement initiated in the early 1980s in the South of Sri Lanka, questioning the limitations of western science which gradually transformed to an extremist form of Sinhala nationalism (Witharana 2002). The *Jathika Chinthana* discourse identified the ancient tank-based hydraulic civilization of Sri Lanka as a phenomenon unique to Sri Lanka that originated and developed within the boundaries of the island. The contemporary Ravana narrative has extended these unique developments in the island to other areas of science and engineering, and to the history of the Sinhala nation itself, by entirely erasing the significance of the presence of India from the picture.

The desire of the Sinhala nation to sever links with India however, provides just the background to develop an explanation for the sudden mass scale surge of interest in Ravana. It still does not demonstrate why the Ravana narrative became so popular during the past few years and not before.

Another theory that could explain the Sinhala community's strong engagement with the Ravana narrative was presented by leading artist and academic Jagath Weerasinghe, when he introduced the Werner Herzog film "Cave of Forgotten Dreams" on 19 February 2016, in Colombo. Commenting on the mass scale interest of the Sinhala community in Ravana, Weerasinghe identified the claim by the Tamil separatist movement to declare the North-East region of the island as the traditional homeland of Tamils as the factor that triggered the re-emergence of the Ravana narrative in recent times. Weerasinghe was of the opinion that the theory of the traditional homeland of the Tamils demanded

from the Sinhala side a better story than the *Mahavamsa*, to counter claims by Tamils for a homeland. However, Weerasinghe's argument still does not fully explain this unprecedented surge of interest in Ravana now and not before. The claim for a traditional homeland of the Tamils is nothing new and was in the discourse of Tamil struggle for quite some time[262] and the condition, as suggested by Weerasinghe, was available at least from the 1950s.

Compared to the story of Ravana that was in circulation among the Sinhalese for several centuries, the twenty first century narrative contains a range of elements that make it attractive to different segments of modern Sinhala society. The recent attempt to reinterpret archeological ruins to fit the narrative of Ravana has injected credibility to the otherwise mythical story. The *Vargapurnikava* adds an element of authenticity to the Ravana narrative. The prominent role played by women in the Yakka nation, as informed by *Vargapurnikava*, has given a liberal outlook to the otherwise traditional narrative of the Hela nation. The connections established with the Abhayagiri tradition of Buddhism have contributed to further improve this progressive image of the Ravana narrative. A number of commentators have worked tirelessly in promoting the sub narratives of the Ravana discourse. Sooriya Gunasekara (who wrote extensively on the advances of science and engineering of the Ravana dynasty), Gayan Sandakelum (producer of the popular television programme *Helawanshaya* which devoted time to trail the historical landmarks of Ravana history) and Thero Manewe Vimalarathana (who published commentaries of the *Vargapurnikava* as the custodian of the ola leaf) provided the deciding combination in the effective promotion of the discourse[263]. The spread of electronic media with dozens

[262] According to De Silva (2005) the history of the concept of traditional homeland of Tamils goes back to the 1950s (p.84). A resolution urged at the inaugural convention of the Federal Party in 1951 refers to "inalienable right to the territories" which have been traditionally occupied by the Tamil-speaking people (p. 86). The famous Vaddukoddai Resolution, the expression of the desire of the Tamil people for a separate state at the first national convention of the Tamil United Liberation Front (TULF), adopted on the 14th May 1976, uses the concept of traditional homelands as a fundamental principle to build up its argument (Vittachi 1995, pp.28-37). A year later the TULF in its manifesto to the General Elections 1977, while referring to traditional homelands, went further to say that "even before the Christian Era the entire island of Ceylon was ruled by Tamil kings" (Bandarage 2008, p.72).

[263] Even though one can see the surge of Hela narrative of Ravana in recent times as a continuation of the Hela Havula discourse on the origin of the Sinhala nation, there are clear differences between the two projects when it comes to the expected objectives, leading commentators and the audiences they addressed, contents and the modes of spread. While the main objective of Hela Havula remained as the purification of the Sinhala language from the influences, especially of the Indian languages, the current discourse with a broader mandate expects to replace the narrative of the *Mahavamsa* with the narrative of Ravana, as the history of the Sinhala nation. In contrast to the Hela Havula approach of moving into a confrontation with the power elite of Sinhala society, the commentators of the contemporary Ravana discourse were in favour of maintaining cordial relationships with the leadership of the Sinhala polity and especially with the powerful Rajapakse family. The low caste factor that acted as a barrier to the campaign by Hela Havula is not visibly present in the contemporary project. While Hela Havula was mainly a literary exercise confined to a segment of educated middle class of the Sinhala society, the Ravana discourse

of FM and television channels in operation and of social media with platforms such as Facebook pages, websites and blogs has facilitated the transmission of the Hela Ravana story among ordinary people in quick time in comparison to the slow spread of the narrative in the past, presumably within pockets where the narrative generated interest.

I would like to argue, however, that the early twenty first century 'moment' of Sinhala nationalism that left open the space for a new reading of the Sinhala nation through the narrative of Ravana, is made possible by the superimposition of two important phenomena. Special conditions at the time which are described below, demanded a new reading of the Sinhala nation on the one hand, and a reading that suited the demand that emerged in the form of a Ravana narrative, on the other. A careful look at the recent Ravana surge shows that the surge overlaps with the years leading to the defeat of the LTTE in the decades-long war between Tamil militants and the Sinhalese government. Most of the material (books, newspaper articles, radio and TV programmes, websites, Facebook sites and blogs) were produced after the war against the LTTE (after May 2009) and the rest during the final stages of the war during which the LTTE started weakening (during the years leading to 2009). Sinhala nationalism, the driving force behind the war effort by the Sri Lankan government, seemed to reach a peak with the defeat of the LTTE. The *Mahavamsa* history with its messy links to India and with the myth of origin of the Sinhalese from Vijaya whose aristocratic lineage is challenged by many, starting from the Hela Havula group, became inadequate as a history for the Sinhalese after the victory against the LTTE. Vijaya's ancestry as it is described in the folklore - of his grandfather being a lion, an animal and his father and mother being brother and sister, while relating him to a line of heroic 'lion blood', has nevertheless made it difficult to showcase in the context of a modern world. Achieving the defeat of the LTTE is so significant for the Sinhalese in general and the governing regime in particular, that they deserve a better, grander history. The victory against the LTTE provided the boost of confidence desperately needed by a nation that had nothing significant to claim except the glory of an irrigation civilisation of ancient Sinhalese kingdoms, and perhaps the victory at the cricket World Cup in 1996[264]. The government's propaganda reached its zenith after defeating the LTTE, to portray Sri Lanka as a great nation and its leader President Mahinda Rajapake, as one of the great leaders of the world. The Ravana

seems to catch the popular imagination of the Sinhala community at a rapid pace, through its spread in all popular mediums such as newspapers, tabloids, books, novels, radio and television programmes and the Internet.

[264] The Sri Lankan victory in the fifty-over cricket world cup against Australia is still hailed by the Sinhala community as a major achievement for the nation. The twenty-over cricket world cup title in the finals against India in 2014, however, has not received equivalent fame.

narrative with the technologically advanced Hela nation extending its influence within the planet earth and even beyond, with Ravana as its mighty leader, fitted well with the self-generated fame of the post-2009 Sinhala nation. In contrast to the technological achievements of Sinhalese as mentioned in the Vijaya narrative, that are confined to the achievements of an agriculturally advanced civilisation, the engineering accomplishments of the Ravana dynasty in an array of fields that included air travel, space travel, seafaring and the use of nuclear energy, have placed the technological advancements of the Helas on par with the technical expertise of global superpowers in the modern-day world. If the theory of Aryan descent provided the Sinhala nation with access to relate as equals to the colonial master in the nineteenth century, advances in the fields of modern engineering in the Ravana dynasty have allowed the Sinhala nation to be identified with the club of other superpower nations.

The perception of a nation which is mobilised on the basis of its shining past can assumed to be unstable at a time when the said past of the nation, the main guideline in defining national identity, is contested (by another past). An attempt to give up the past of a nation for a past that is radically different to the previous one is hence, a risky exercise from the point of view of the stability of the nation. As Billig (1995) pointed out, nations need to be reproduced on a daily basis under normal circumstances. Reminding its citizenry of its existing unique past on a regular basis is a part of this process of reproduction. The Ravana moment motivates one to revisit this general wisdom. Even though a nation is situated in general on a base of a national past (or a future), I would like to argue that a nation can have its own existence, its own life, independent of its past at certain rare moments where the nation is at its peak of confidence. The success of the war with the LTTE which was considered one of the most powerful guerrilla movements in the world and the ultimate victory in 2009, has provided the Sinhala nation such a moment in the history of the nation where the enemy, the other, has disappeared from the national landscape at least for a short period of time. With the absence of an 'enemy' the tendency to strictly guard the mainstream Sinhala history provided by the *Mahavamsa* seems to be absent or relaxed. It is a rare moment at which a nation can afford to replace a past with a new past. The emergence of the Ravana narrative in the early twenty first century therefore, does not fall in line with Smith's (1999) theory that myths emerge at a time when a backward ethnic community is faced with an external threat and a time of prolonged war (p. 84). The Ravana myth reached its zenith when the external threat was about to be removed and disappear. Even though it didn't exist in material form as in the cases of Hydro Electric Scheme or the Accelerated Mahaweli Development Project but as an imaginary construction, engineering as described in the Ravana narrative provided the kind of ideal past the confident and victorious Sinhala nation was looking for and was proud of having. While both the

AMDP and the technologically superior Ravana dynasty are examples of 'engineering sites' that facilitated journeys of the Sinhala nation to its past, the Hela Yakka dynasty differs from the AMDP in the special role it played in attempting to replace the existing past with a new past and, hence adding a new dimension to our discussion.

4.5.4 The future

It is still too early to predict the future of the Ravana narrative in relation to its success in redefining the Sinhala nation. One could argue that the Ravana narrative will have to sort out issues on three fronts if it is to continue its forward march. The fall of the Rajapakse regime in the presidential elections in January 2015 can be seen at first glance as a serious setback. However, the ten year rule and the victory in war achieved by the Rajapakse family have left their influence on Sinhala nationalist ideology, to be marked decisively irrespective of whether they are in power or not. The authorities of Sinhala nationalist ideology dealt with both the *Mahavamsa* and the Ravana narratives carefully while sympathizing with the latter[265]. The Ravana narrative also has to engage with the academic front whose response towards it, in public media, is diverse. While the natural tendency is to consider the Ravana narrative as a greater myth compared to the myth of Vijaya[266] there seems a sympathy among certain sections of academia towards the theory of considering the Sinhalese or Helas as descendents of Yakka[267]. The gap between the academic sphere and the popular public sphere has let the surge of the Ravana narrative in the popular sphere remain relatively unaffected. The third front that the Hela discourse on Ravana has to engage with is the Tamil community, who consider Ravana to be a Tamil king. This meeting, as far as I'm aware, has not taken place yet[268].

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[265] The approach by Nalin De Silva, who became a key spokesperson of Sinhala nationalism and of the Rajapakse rule, is a case in point. Writing under the title "The Mahavamsa Myth" to *The Island* on the 25th February 2014, De Silva refers to *Vargapurnikava*, not as a text unavailable in public space but as a "book ....compiled during the last phase of the Sinhala kingdom [revealing] that other Bududahamas and Vamsakathas were existing at that time".

[266] Dewasiri confronts the narrative of Ravana head on in his newspaper article under the title "Ravana, a truth or a lie?". Based on the argument that the facts presented in the narratives are more fictional when one goes back in time and that the supposed 'archeological evidence' in support of the Ravana narrative could also mean imagination rather than facts of reality, Dewasiri concludes that the Ravana narrative is a myth (Ravaya weekly, 07 and 14 September 2014).

[267] The findings of his latest excavations, Somadeva, as reported in a newspaper under the title "Archaeological findings open new chapter: Prof Somadeva" provide evidence of a well organised society of Yakka people who were practicing Buddhists who lived more than 2000 years ago (Daily Mirror, 02 September 2014).

[268] The language barrier has prevented this meeting so far. While commentators of Hela Ravana used to construct their discourse mainly in the Sinhala language, the treatment of Ravana as a Tamil king is done by Tamils in Tamil language. It is interesting to observe a parallel surge of interest within the Tamil nation to reclaim Ravana as a great leader of the Tamil community. For example, the article series written by N. K. Thiruchelvam which appeared from January 2014 to March 2015 in the Tamil daily *Tiṉakkural* by arguing the case for Ravana as a Tamil king, has not triggered any response from the Hela Ravana community, yet.

Conclusion

> "And our celebrated duty of memory is proclaimed in the form of an exhortation not to forget. But at the same time and in the same fell swoop, we shun the spectre of a memory that would never forget anything. We can even consider it to be monstrous"
>
> *Memory, History, Forgetting* – Paul Ricoeur

This study is conducted at the crossroads of two disciplines; the material study of engineering and technology and the social study of nations and nationalism. While focusing on the popular claim by the Sinhalese as a nation of engineering excellence, this dissertation looks at how and why this perception by the Sinhalese has been constructed, modified and revised over time, and examines the people and projects that have been included and excluded in the process.

The narrative of engineering and the narrative of the Sinhala nation

The construction of a narrative of the Sinhalese as a great engineering nation rests upon a belief shared in general by the members of the Sinhala nation and is a continuous process that is fashioned on a day today basis. The basic features of this narrative, however, were established in the nineteenth and early twentieth centuries and during British colonial rule, when ruins of a technologically advanced civilization were excavated and restored using the principles and practices of modern engineering. Grandiose monuments – giant stupas, reservoirs, multi-storey structures that were restored by engineers of colonial times, provided evidentiary proof for this narrative of a grand hydraulic civilization built by the Sinhalese. The restoration of ruins and massive structures of engineering played a central role, along with two other important occurrences – the translation of the *Mahavamsa*, the Great Chronicle, from Pali to English and the spread of the theory of an Aryan race, as other scholars have argued, in defining what I would call the 'nineteenth century moment' of Sinhala nationalism. The *Mahavamsa* provided the story line to position the restored ruins in a chronological order and in turn, the ruins provided

credibility to the narrative of the *Mahavamsa*. Aryan status elevated the community of Sinhalese to sit as equals with their colonial masters and above other ethnicities who shared with them the same land on the island. It was the 'moment' at which the nation of Sinhalese emerged, as it is understood today. The narrative of Sri Lankan engineering and the narrative of the Sinhala nation seem to go hand in hand, while feeding off each other.

This thesis has shown however, that the case is more complex than described above. On the one hand, there is no single narrative that portrays the Sinhalese as a great engineering nation, but many. Even though they communicate a single message of engineering excellence of the Sinhalese, they differ when it comes to details. As one sifts through the narratives in circulation among different segments of the Sinhalese community, what appears is a variety of narratives that differ according to the sources that are being used to construct them. While grand works of engineering, mostly monuments such as tall stupas, large reservoirs and multi-storey structures, are showcased prominently in all narratives, other items in the list of marvels vary. The wind driven iron smelting industry, for example is a relatively recent addition to the list and highlighted only by some. The trade of ancient shipbuilding is another case which appears occasionally. On the other hand these narratives of engineering excellence of the Sinhalese have exercised 'violence' of various kinds when faced with challenges: things have been tolerated, included and highlighted if they follow the accepted line or neutralised and excluded through silencing or suppression if they counter or threaten them. I argue that it is the close relationship maintained between the narrative of engineering and Sinhala nationalism that triggers these responses of a violent nature. The intimate connection between the two automatically makes an anomaly, a challenge or a threat to the narrative of engineering, also a challenge to the narrative of Sinhala nation and hence forcing the first to initiate a negotiation for a settlement with the anomaly or the threat concerned. All major sites of engineering that were built after the introduction of modern engineering remain potential threats to the narrative of engineering described above, until they are discursively mediated and settled. The three sites I use to illustrate this complex process of negotiation, settlement and mediation: the "Aberdeen-Laxapana Hydro Electric Scheme", the "Accelerated Mahaweli Development Project" and "Ravana the engineer and his technological dynasty", show the various forms in which this happens. For instance, the narrative of the developmental nation of Ceylon that was built around the Hydro Electric Scheme and which provided an alternative line of imagination for the Ceylonese during the early parts of the twentieth century, is rarely mentioned in the narrative of the Sinhalese as a nation of engineering excellence and hence, excludes both the scheme and the engineer responsible for the project - Wimalasurendra. The narrative of Ravana as the leading engineer of the Hela nation, the site of mythical

engineering in contrast, seems to survive along with the hegemonic narrative of engineering, even though it is edging towards dislodging the narrative of the Sinhala nation itself in the popular sphere. It is a case of tolerance where the narrative of engineering coexists with the new narrative of Ravana - both stories of engineering excellence of the Sinhalese but differing vastly one from the other in their content. The site of the Accelerated Mahaweli Development Project - the other site of modern engineering that was examined in this study, showcased strategies of negotiation that are different to the two other cases - the Hydro Electric Scheme and Ravana and his technological dynasty. Metamorphosis seems to be the name of the game. On the one hand the Accelerated Mahaweli, a project that sought to establish the material conditions of modernity, is presented discursively, as an attempt to reignite the past glory of the ancient hydraulic civilisation built by the Sinhalese - a case of forced positioning of the Project in a narrative of Sinhala nationalism. The Accelerated Mahaweli Project also provides an example on the other hand, of the construction of a neutral narrative of dry zone development to counter the risk of being seen as a project of the Sinhalese colonising land claimed by the Tamils as their traditional homeland (e.g. the settlement of Sinhalese in Yaan Oya, Malwathu Oya and Madhuru Oya as a secret operation). Interestingly, in the case of "Yaan Oya - Malwathu Oya - Madhuru Oya Operation", the late extension to the Accelerated Mahaweli Project, the narrative of engineering maintained silence as it became an embarrassment even within the Sinhala nationalist opinion, as I have shown in Chapter 3.

Therefore, the narrative of engineering excellence of the Sinhalese is one that is being reconstructed, modified and revised whenever it encounters a new site of engineering, whether it is a site of modern engineering or mythical in nature, as is the case with the story of Ravana. These reconstructions, modifications and revisions of the narrative aim to negotiate settlements between possible inconsistencies, frictions and contradictions generated by new engineering works and the existing script of Sinhala nationalism. Negotiations, as this thesis indicates, are done not just by using the simple functions of inclusion and exclusion of people and projects, but also by using a range of subtle strategies as described above. They vary from exclusion, by maintaining silence (e.g. silence on the Hydro Electric Scheme and on the “Yaan Oya – Malwathu Oya – Madhuru Oya Operation”), inclusion through a process of forced metamorphosis, either to place the site comfortably in line with the nationalist narrative (e.g. dressing up the Accelerated Mahaweli Development Project as an attempt to retrieve past glory), or to hide its real intentions (e.g. to cover up state sponsored colonisation done under Accelerated Mahaweli Development), to tolerance, as long as the new site doesn’t serve the ‘enemy’ (e.g. the narrative of Ravana and his technological dynasty). As I discuss in Chapter 4, the narrative of Ravana - an alternative

reading of the Sinhala past, differs from the hegemonic narrative of the Sinhala nation, yet it still competes with the second for the sake of a common cause, which is the greatness of the nation of Sinhalese.

The way the meaning of an engineering project (e.g. the Hydro Electric Scheme, the Accelerated Mahaweli Development Project, etc.) emerges through a process of negotiation with the existing narrative of nationalism and is incorporated thereafter in the popular narrative of engineering, depends mainly on two general factors – the socio-political and economic contexts at the time and the interests of different influential actors from the level of government to the level of individuals. While there can be several individual explanations as to why an engineering project and persons involved were included or excluded in a narrative of engineering in the long run, a better strategy for understanding the process is not to select a single explanation and to ignore the rest but to hold all of them more or less to be valid, unless they remain in total opposition to each other. The absence of the Aberdeen-Laxapana Hydro Electric Scheme and D. J. Wimalasurendra in the popular narrative of Sri Lankan engineering can be addressed within several lines of discussions, such as the class interests of the Ceylonese bourgeoisie and Sinhala nationalism, caste politics and its relationship with Sinhala nationalism, and as a discussion on the relationship between Wimalasurendra and the Sinhala political elite of the early twentieth century. While no single explanation provides a complete understanding, all of them together seem to bring some clarity to the question regarding the silence surrounding Wimalasurendra. Similarly, the need to package modern development in an acceptable form for the consumption of a Sinhala constituency, the wish for a long term UNP rule in the country by President Jayawardene, the ambition of Minister Dissanayake to emerge as the next leader of the party and the effort by the government in the South to counter Tamil militancy in the North and the East, taken together, provided the context under which the Accelerated Mahaweli Development Project was incorporated in the narrative of engineering, allowing for these multiple interpretations. The victory in the war between the Southern government against the Tamil militants, the Sinhalese' historical uneasiness with living in the shadow of India and the need to provide a better response to the theory of a traditional homeland of the Tamils in combination, created conditions for the narrative of the powerful, technologically superior Hela dynasty of Ravana, to spread in quick time and to coexist with the existing narrative of the Sinhala nation.

By focusing on engineering sites that are very diverse in nature, this dissertation manages to expand understanding on the role of engineering in relation to nationalism. The dissertation suggests to the multiple functions engineering can play in serving the interests of the nation, to the different directions

technology facilitates a nation to consider when mobilising the imagination of its members, and to the different forms engineering can take, on a platform of nationalism.

Functions of engineering in serving the nation

Literature investigating the relationship between engineering and nationalism is biased in general towards the narrative-generating role of technology. Technological artefacts and systems are discussed as objects around which the narratives of nations are constructed. As this study emphasises, technology, as material objects, performs another important nationalistic function - action. The site of the Accelerated Mahaweli Development shows how the material structure, itself, becomes nationalistic. The Yaan Oya - Malwathu Oya - Madhuru Oya Operation which was a modification to the hydraulic map of the Accelerated Mahaweli Development Project and ended as a failed attempt, was incorporated lately to breach the continuity of the traditional homeland claimed by the Tamils. The idea was to physically violate the ground of the traditional homeland, based on which the struggle for a separate Tamil state, Eelam, was conducted by Tamil militants, by installing pockets of Sinhala settlements. The secrecy maintained at the designing stages of the operation and the silence maintained by the mainstream media when Sinhalese were settled on a mass scale on the West Bank of Maduru Oya, point to the fact that rather than the construction of a narrative, the ultimate object was the act of engagement with the Tamil 'other'. The exclusion of the North-Central Province Canal from the Mahaweli development map is another example. By removing (or de-prioritising) the Canal from the map, Tamils living in the North were prevented from accessing water diverted from the River Mahaweli. Both the Yaan Oya - Malwathu Oya - Madhuru Oya Operation and the North-Central Province Canal - late amendments to the original plan of Mahaweli development, exhibit how technical designs of technological systems can themselves be nationalistic and perform functions of nationalism on their own. The entire Accelerated Mahaweli Development Project can also be treated as an act of Sinhala nationalism. If positioned in a narrative of colonisation, the Project is primarily a scheme to establish Sinhala colonies in the lands of the North and the East, the two Tamil dominant provinces of the island.

Engineering and the direction of national gaze

In addition to the functions performed, either narrative or physical, the involvement of engineering in relation to nationalism is also about the directions that a nation looks at when mobilising her members to come together. Even though they are not categorised as such, the literature on the role of engineering in nationalism points to some nations that look forward and others that look backward in

the construction of identities. Technology tends to facilitate members of nations, as imagined communities, either to look forward and visualise their own common future or to look backward and remind themselves of a shared past. Sri Lanka is widely considered to be a place where communities, the Sinhalese and Tamils for example, look backward in search of their identities. The Accelerated Mahaweli Development Project shows how, as a modern engineering site, it is used as a ground to remobilise Sinhala nationalism by reviving memories of a glorious past. Positioned as a narrative for reviving the glory of ancient times, the Accelerated Mahaweli Development was used to take the Sinhalese on a journey towards the past. A chronicle that was authored recently on the history of the Mahaweli Valley, the *Mahaweli Vansaya*, accompanied by a collection of rituals introduced as invented tradition and celebrated in public, helps the narrative to organise this journey. The case of Ravana and his technological dynasty provide further proof for this inclination towards the past, and mobilise the imagination of the Sinhala nation even further into the past.

As a condition for and as a product of modernity, the role of technology, however, is not really about coordinating journeys into the past but to the future. Engineering provided the physical infrastructure upon which the modern nation state was built and is also a narrative for members of the nation to imagine a technologically superior future. Even though it went unnoticed and does not appear in the narrative of Sri Lankan engineering and in the text of mainstream history, the Aberdeen-Laxapana Hydro Electric Scheme, as this thesis shows, facilitated the vision for a Ceylonese developmental nation. It survived at least for a few decades in the early twentieth century as an alternative model based on which the future independent state of Ceylon could be designed. Hence by going against the widely held opinion that the people of the island always looked towards the past in forming identities, there were attempts at times to look both ways, to look backward as well as to look forward. By adding another dimension to this discussion on how the sites of engineering are used in mobilising nationalism, this study argues that nations not only stare along the time axis towards the future or the past, but looks also at space and beyond the boundary of self and towards 'others', Tamils in the case of Sinhalese. The presence of the enemy, the 'other', helps in mobilising a feeling of belonging among its members and pushes the nation towards action. The cases of "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North-Central Province Canal", serve as examples. Both cases can be regarded as engineering responses which, address concerns generated by the 'other': one by trying to confront the enemy (i.e. by creating Sinhala settlements in Yaan Oya, Malwathu Oya and Madhuru Oya) and the other by hurting the enemy (i.e. by dropping the proposal to supply water to the north through the North-Central Province Canal).

Situating engineering within nationalism

Even though the understanding of technology has evolved to mean something with overlapping categories such as technical, economic, political and social, in general it is still the understanding in the discourse of engineering and nationalism, that engineering or technology is a terrain of materiality. Discussions on engineering in relation to nationalism, treat technology as objects, artefacts and systems. Within the narrative of heritage, engineering is represented by grand material structures made from soil, wood and stones. Mines, cities, railroads, ports, communication networks, air and space craft, etc., all forms of material artefacts, symbolise modern nation states. The role of the engineering profession and engineering education in relation to nationalism and nation building is discussed also on a platform of materiality. Engineering and technology, however, take different shapes within the context of this study - both material and non-material. When positioned within a discourse of nationalism, engineering can be broadly defined. This thesis argues that engineering is not just an object, an artefact or a programme, but also a condition, a myth, a symbol, a tool, an actor, a worksite, a conceptual space or a community. Whether engineering remains a tool, an actor or a worksite, for example, is dependent on how one prefers or is forced to look at it. This possibility of multiple readings allows a technological object or a system to have multiple identities with respect to the role it plays on the soil of nationalism. As mentioned above, engineering, as a grand myth of technologically advanced Ravana dynasty that provided leadership to the entire world, acts as a condition for the 'twenty first century moment' of redefining the Sinhala nation. The expertise of Sinhalese people - the descendants of King Ravana, in irrigation, building construction, navigation, aviation and nuclear energy, provides the ideal turf for the Sinhalese to shift with pride to a grander narrative of Sinhala nation, one that is demanded after the victory in the war against the Tamil Tigers. Engineering also means a symbol, a tool or an agent under diverse conditions. Engineering can become a symbol around which the imagination of a nation can be mobilised. The imagination that is being mobilised can be for a nation that is to be built in the future as it is the case with the Hydro Electric Scheme, or for a nation that is already in existence as the cases of the Accelerated Mahaweli Development Project and Ravana the engineer illustrate. The narrative constructed around the symbol plays the key role of mobilising the imagination. The technical structure, taken in isolation, remains 'neutral' while the narrative performs the political act. Instead of becoming a tool to serve a function on behalf of the nation, the technological object itself, can become the political act, as shown by the "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North-Central Province Canal". The hydraulic map of the Accelerated Mahaweli Development Scheme is itself biased

towards the Sinhala nation. It is a case where engineering as an object is no longer 'neutral' but becomes inherently political and nationalist.

Engineering can also be defined as a site within the context of nationalism. It provides the ground on which the nation is produced, reproduced and re-established, both narratively as well as in physical terms. All three cases – the Hydro Electric Scheme, the Accelerated Mahaweli Development Project and Ravana's dynasty, are sites in this sense. The Hydro Electric Scheme is the site on which the vision of a new Ceylonese nation emerged in the early twentieth century. The Accelerated Mahaweli Development Project is a site that was used for a range of functions that served the nation. The *Mahaweli Vansaya*, the chronicle of Mahaweli, revisited the past to reconstruct and re-establish the identity of the Sinhalese by locating Mahaweli valley as the heartland of Sinhala nation. The "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North-Central Province Canal" were attempts to re-establish the territory of the Sinhala nation through expansion in the first case, by reclaiming land and through exclusion in the second, and hence reinforcing the territory of the nation by restricting the resources claimed by the nation to be consumed by its members within its own boundaries. The Ravana dynasty is a mythical site and a conceptual space, and it is here that the redefinition of the Sinhala nation is attempted, at present. At times, engineering also means a community. From Wimalasurendra to Ravana and from engineers at the Central Engineering Consultancy Bureau to the technically skilled community of *Yakkas*, engineers were at the forefront of constructing, reconstructing, modifying and revising the Sinhala nation.

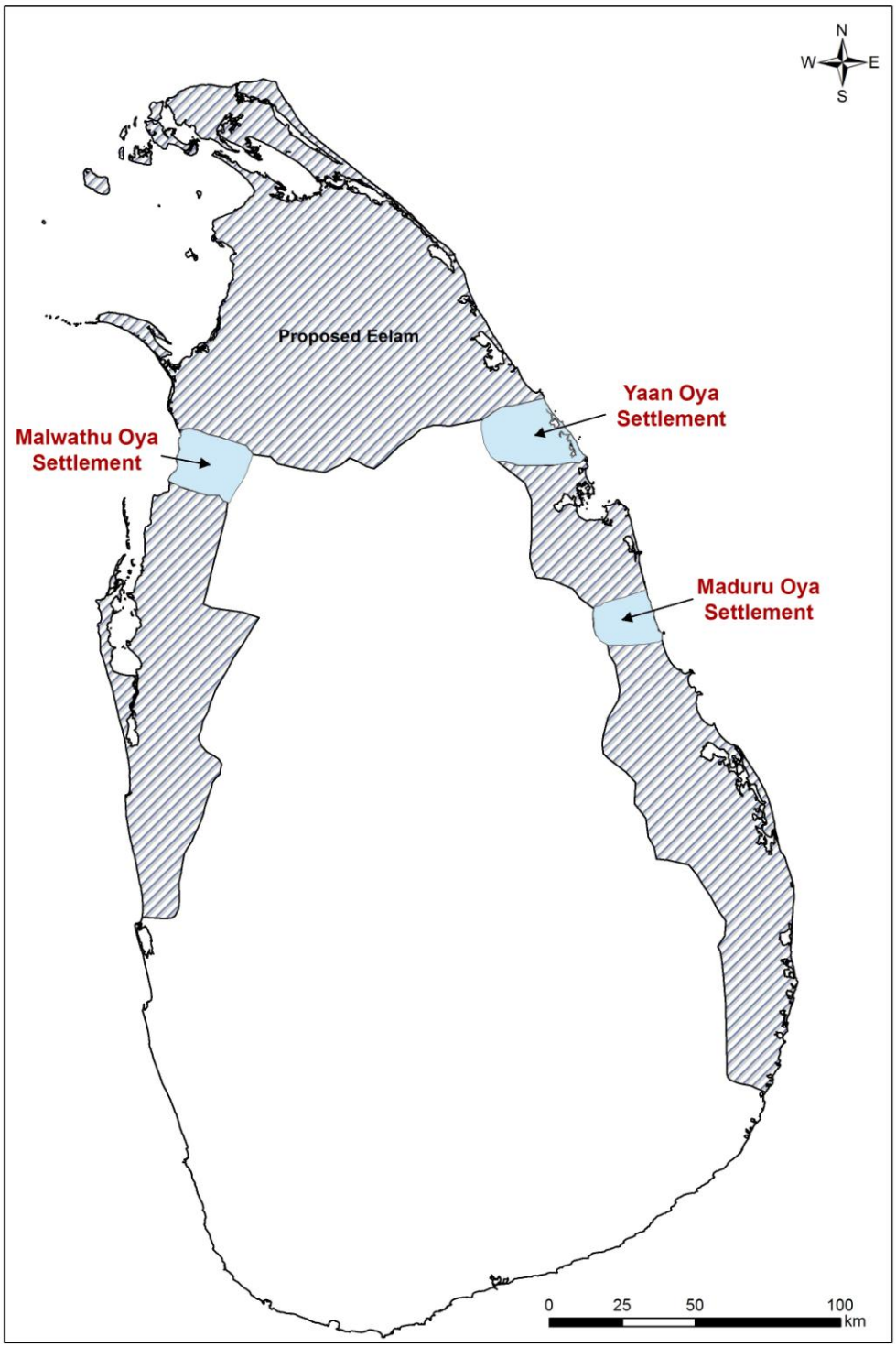
By using a popular narrative of Sri Lankan engineering and three specific case studies, this dissertation brings different lines of discussions - on the meaning of technology and engineering, heritage and grandiose monuments, developmental states, invented traditions, myths, politics of artefacts, the role of other in identity construction, the role of technology in nation building and community of engineers – that have until now been conducted by scholars as distinct fields of inquiry to a single table. It brings discussions on the technological sites that mobilised nationalism with a forward and a backward gaze, to a common space and then proposes to introduce a third direction of gaze, towards the other, for a better understanding. It creates a space to situate these diverse lines of arguments next to each other, to compare, combine and formulate a reasonable framework as discussed above, to discuss engineering and technology in relation to nationalism.

Engineering remains a dominant theme in the Sinhalese political discourse in particular because the popular narrative of the advancement of Sinhalese engineering elevates the nation to a level that is

above ‘others’ and on par with powerful nations in the world. A nation with a backward gaze desperately needs achievements to be proud of and when it comes to the Sinhalese, the popular narrative of engineering caters to that need. As a condition and a product of modernity, engineering carries the glamour that is required to generate a sense of pride from a 'modern' perspective.

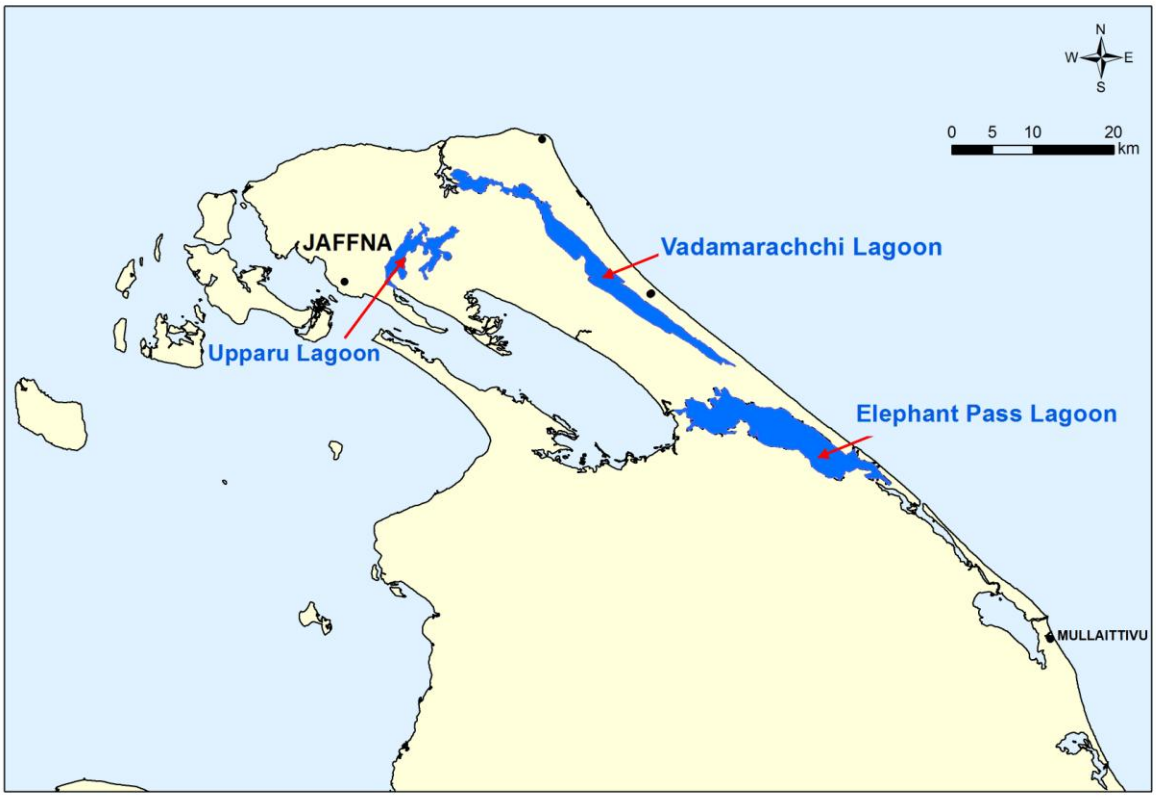
Maps

Map 1: Yaan Oya – Malwathu Oya – Maduru Oya Operation



(Source: Gunaratne 2009[1988])

Map 2: A River for Jaffna



Map 3: The presence of 'other' in the Mahaweli development map

Master Plan
(Source: Food and Agriculture Organisationof the United Nations, 1969)

The AMDP
(Source: Ministry of Land, Irrigation and Mahaweli Development, 1980)

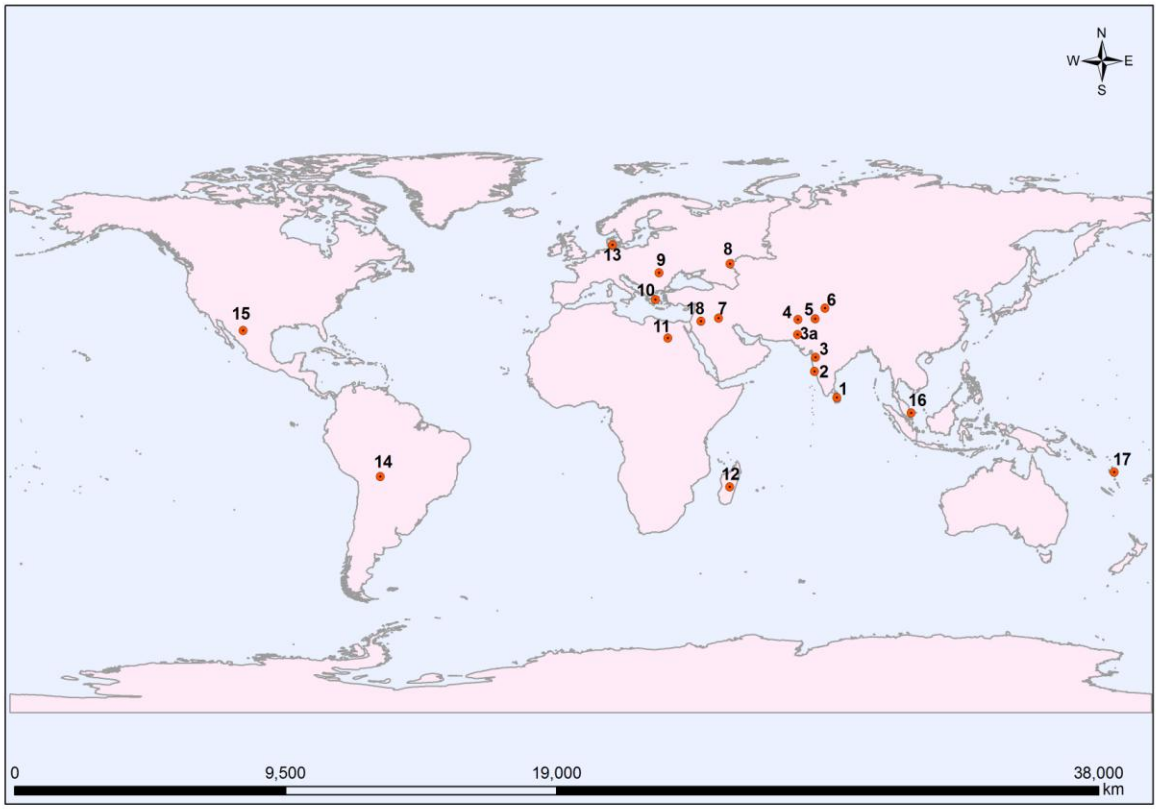
Case 1: Yaan Oya – Malwathu Oya – Maduru Oya Operation

Case 2: NCP Canal

The AMDP
(Source: Gunaratne 2009[1988])

The AMDP
(Source: Asian Development Bank 2014; Wijenayake 2015b)

Map 4: Global spread of the Ravana dynasty



(Source: Gunasekara 2013b)

1. Lankapura 2. Bagukachcha 3. Janasthana

3a. Mohenjo-Daro 4. Harappa 5. Kailasakuta

6. Anavathaththa Vila 7. Babylonia

8. Caucasus 9. Ramaniya Desa 10. Athens

11. Misaraya 12. Madagascar 13. Heligoland Islands

14. Pathalaya 15 Suthalaya 16. Sinhapura

17. Ramanaka Diva 18. Aesiriyava

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Summary in Dutch / Nederlandse Samenvatting

Onderhandelingskracht en Vorming van de Natie: Bouwkunde in Sri Lanka

Samengevat, deze studie is een onderzoek naar overeenkomsten tussen de Srilankaanse bouwkunde (engineering) en Sinhalees nationalisme; het nationalisme van de meerderheid van de inwoners op het eiland: “de Sinhalezen”. De populaire overtuiging onder de Sinhalezen is dat ze experts zijn op het gebied van engineering. Volgens voormalig president Rajapakse zit engineering in het bloed van de Sinhalezen, zo vermeldde hij in zijn boodschap aan “the centenary commemoration publication of the Institution of Engineers Sri Lanka” (IESL) in 2006.

Deze studie is een poging om te begrijpen waarom de Sinhalezen zichzelf beschouwen als meesters in engineering, hoewel het eigenlijke niveau van technologische ontwikkeling op het eiland erg laag blijft, en hoe deze specifieke overtuiging over Srilankaanse engineering voor zo een lange tijd stand heeft gehouden. Een vluchtige kijk op deze overtuiging, welke zich richt op hoge stupas, oude koninkrijken met paleizen van hoogstaande architectuur, enorme waterreservoirs en complexe irrigatie-netwerken die gebouwd zijn door de voorvaderen van de Sinhalese natie, suggereert dat het discours zwijgt over een aantal belangrijke aspecten. Zo neemt dit populaire discours over de geschiedenis van de Sinhalese bouwkunde andere ontwikkelingen, zoals moderne gebouwen uit de koloniale tijd, de werken na de onafhankelijkheid, geheel niet in overweging, alsmede de technologische ontwikkelingen, voor de koloniale tijd, van buiten het eiland. Dit heeft te maken met het feit dat het discours op de Sinhalese ingenieurswetenschappen pas recent is ontstaan, tijdens de Britse koloniale tijd, en het gevolg is van de enorme hoeveelheid restauraties van de klassieke bouwwerken op het eiland. Deze restauraties werden echter uitgevoerd met behulp van de moderne wetenschap.

Dit onderzoek richt zich op drie projecten, de eerste twee zijn het Aberdeen Laxapana Hydro Electric Scheme (HES) (1900-1936) en het Accelerated Mahaweli Development Project (1978-1985) - twee belangrijke engineering projecten uitgevaardigd in de

twintigste eeuw - en het derde project is een mythische site, de technische dynastie van de historische koning Ravana en de sterk groeiende recente interesse in hem. Bij nader onderzoek blijkt dat het populaire discours over de Sinhalese bouwkunde en het discours met betrekking tot de Sinhalese natie sterk met elkaar verbonden zijn en zelfs onderling afhankelijk zijn van elkaar.

In tegenstelling tot de lang overeind gebleven overtuiging dat Sri Lanka een klassiek voorbeeld is van etnisch nationalisme waar de identiteit van de Sinhalezen en de minderheid, de Tamils, antidoten zijn van elkaar, toont de "Aberdeen – Laxapana Hydro Electric Scheme site" dat een ver uitgespreide beweging van Ceylonees nationalisme aanwezig was gedurende de eerste helft van de twintigste eeuw. De overtollige voorraad hydro-elektrische energie, ontwikkeld vanuit het project - het eerst geproduceerde massa hydro-elektrische energiegeneratorproject ooit - faciliteerde de overtuiging van een industrieel ontwikkeld Ceylon, een overtuiging die de inwoners van het eiland hielp om etnische verdeeldheid binnen de gemeenschappen te overstijgen en een gemeenschappelijke Ceylonese natie te visualiseren. Echter, de HES en D.J. Wimalasurendra, de Ceylonese ontwikkelaars hiervan, worden niet genoemd in de populaire overtuiging van engineering. Deze afwezigheid kan op verschillende manieren uitgelegd worden, zoals de prominentie van het kastensysteem en de plaats hiervan in het Singalese nationalisme, de waarde die werd toegekend aan sociale klassen door de Ceylonese bourgeouisie en de plaats van deze klassen in het Sinhalese nationalisme, evenals de status van de relatie tussen D.J. Wimalasurendra en de Sinhalese politieke elite aan het begin van de twintigste eeuw.

Het tweede project, het 'Accelerated Mahaweli Development Project (AMDP) illustreert goed hoe Sri Lankaanse bouwkunde verbonden is met het Sinhalese nationalisme. Terwijl het Sinhalese nationalisme het niet heeft over het hydro-elektrische project van Wimalasurendra, wordt het Mahaweli project wel genoemd. Het AMDP was het grootste bouwkundige project dat ooit is uitgevoerd in de geschiedenis van het eiland. Het project maakte gebruik van moderne technologie en was geheel in lijn met het Sinhalese nationalisme. Het project wordt in het algemeen gezien als een poging om de glorieuze Sinhalese hydraulische civilisatie na te bouwen, zodat het project te plaatsen valt in lijn

met de Sinhala legende. Zoals door “AMDP” getoond, dient technologie de natie op twee verschillende manieren; ten eerste door een materieel object te vormen waar een nationalistische geschiedenis omheen wordt gevormd, en ten tweede, door het uitvoeren van bepaalde functies gedefinieerd door de natie. Het design van de AMDP was zelfs zodanig aangepast, dat het ten eerste; letterlijk het traditionele vaderland van de Tamils op het eiland schond, en het ten tweede onmogelijk was voor Tamils om deel te nemen aan het project omdat het niet werd doorgevoerd in de noordelijke provincie van het eiland, waar de meerderheid van de Tamil bevolking leeft. Ten gevolge van het voorgaande kan het project daarom worden gezien als een vorm van Sinhalees nationalisme.

De legende van Ravana, waarin hij wordt gezien als de leidende bouwkundig ingenieur van de Sinhalese natie, in tegenstelling tot de hierboven genoemde twee projecten, lijkt te kunnen voortbestaan naast het hegemonische discours over de bouwkunde, ondanks dat dit het populaire discours van de Sinhala natie an sich neigt te ondermijnen. Het suggereert een alternatieve geschiedenis, drastisch verschillend van de bestaande. Het verhaal van Ravana en zijn wetenschappelijk hoogstaande dynastie is een verhaal gebaseerd op tolerantie, waar het verhaal van de algemeen aanvaarde geschiedenis van engineering op het eiland leeft naast die van het verhaal van Ravana. De kroniek van de historie van bouwkundige excellentie door de Sinhalezen is er een die constant onderhevig is aan reconstructie en die regelmatig wordt veranderd wanneer het een nieuwe bouwkundig project betreft van moderne bouwkunde tot aan de mythische bouwkunde. Deze reconstructies, aanpassingen en revisies richten zich effectief op het oplossen van fricties, tegenstrijdigheden en discrepanties, die ontstaan door nieuwe architecturale bouwwerken en de bestaande overtuiging van het Sinhala nationalisme.

Curriculum Vitae

Bandura Dileepa Witharana was born in Colombo, Sri Lanka on the 29th of October 1965. In 1991 he obtained his B.Sc (Eng.) (Honours) in the field of Electrical Engineering (Power) from the University of Moratuwa, Sri Lanka. While working as a research assistant at the Department of Mathematics and Philosophy of Engineering of the Open University of Sri Lanka he obtained his MPhil in 1998 in Electrical Engineering. From 2000 to 2002 he worked as a community peace worker for Quaker Peace and Service / Thirupthiya and from 2002 to 2003 as a research assistant at the International Centre for Ethnic Studies, Colombo. He was a consultant to the Energy Forum in 2004 and was a consultant / project manager at the Intermediate Technology Group / Practical Action from 2004 to 2008. Since 2008 he is teaching at the Department of Mathematics and Philosophy of Engineering at the Open University of Sri Lanka as a Senior Lecturer. His doctoral research was conducted at the Institute of Area Studies, Leiden University.

Propositions

1. Ever since the invention of tools human society has been a socio-technical space.

2. Physical remains of ancient works of engineering create a bridge between then and now.

3. Forgetting is as important as remembering when it comes to construction of history.

4. Fresh studies on technological sites that have so far been un-investigated, enhance our current understanding of the past.

5. Technology performs both discursive and non-discursive functions on behalf of the nation.

6. There is a close intimacy between Sri Lankan engineering and Sinhala nationalism.

7. The narrative of engineering excellence of the Sinhalese, the majority community of the island, is one that is being reconstructed, modified and revised whenever it encounters a new site of engineering, whether it is a site of modern engineering or mythical in nature.

8. Using the medium of technology nations not only gaze along the time axis towards the future or the past but look also at space and beyond the boundary of self and towards 'others', Tamils in the case of Sinhalese.

9. In the sphere of Sinhala nationalism, engineering is not just an object, an artefact or a programme, but also a condition, a myth, a symbol, a tool, an actor, a worksite, a conceptual space and a community.

10. A theory is always an incomplete representation of the reality. A theory is possible only when a part of the entire pool of data is excluded.