

Shaking the Roots of Western Science in Amitav Ghosh's *The Calcutta Chromosome*

Sanjit Mishra and Nagendra Kumar¹
Indian Institute of Technology, Roorkee, India

Abstract

The typical worldview based on the strict hierarchies and rigid binaries of standard/nonstandard, civilised/savage, good/bad, dark/white, rich/poor and so on needs to be interrogated and dismantled in order to develop a fair perspective of the world. Amitav Ghosh's *The Calcutta Chromosome* (1996) presents a critique of the Eurocentric discourse of science and offers the possibilities of an alternative, and a paradigmatic shift in our perception of modernity and primitivism. The present fascination for the Western model of science and development will push the planet nowhere but to a premature collapse. In this paper, we discuss the subversive strategies which Ghosh employs in the text to conclude that it is time we interrogated the grand narrative of science and development and put the local "other" in its place if we want to save the world from an impending disaster.

Abstract in Malay

Pendapat umum yang biasanya berdasarkan hierarki tipikal dan binari tetap seperti seragam/tidak seragam, bertamadun/mundur, baik/jahat, hitam/putih, kaya/miskin dan sebagainya harus diperiksa dan dirungkaikan untuk mewujudkan perspektif sejagat yang lebih adil. *The Calcutta Chromosome* (1996) oleh Amitav Ghosh memberikan kritikan terhadap sains yang bersifat keBaratan dan menawarkan kemungkinan bagi alternatif, dan anjakan paradigma dalam persepsi kita terhadap kemodenan dan primitifisme. Ketakjuban terhadap konsep sains Barat ini akan hanya membawa kepada kemusnahan dunia lebih awal dari yang sepatutnya. Dalam esie ini, kami membincangkan strategi bertentangan yang digunakan oleh Ghosh untuk merumuskan bahawa sudah tiba masanya kita menyelidiki alam sains dan pembangunan dan meletakkan elemen tempatan di tempatnya sekiranya kita hendak menyelamatkan dunia daripada malapetaka yang semakin hampir.

Keywords

Eurocentric, development, postcolonial, binary, subversive, counter science

¹ Dr. Sanjit Mishra and Dr. Nagendra Kumar both teach at the Indian Institute of Technology Roorke, respectively as Assistant Professor of English in the Department of Paper Technology and Associate Professor of English in the Department of Humanities and Social Sciences.

Keywords in Malay

KeBaratan, pembangunan, pascakolonial, binari, pemberontakan, subversive, bertentangan sains

The modern science is largely based on the principles and theories propounded by the Western countries that were successful in subjugating some of the culturally rich countries like India among others. Exposing those manipulative strategies which they employed in maintaining their dominance over the colonised for their various economic and cultural interests is a major concern of a typical postcolonial writer. History is replete with the instances that highlight the rich cultural heritage of India where science and technology occupied a very important place. Starting with the Indus Valley civilisation around 2500 BC, India has been the site for significant historical and philosophical developments intermeshed with several facets of scientific and technological activities. Excavations at Kalibangan and Lothal feature the scientific planning of towns and buildings using standard burnt bricks, interlinked drainage system, wheel-turned ceramics, solid wheel carts and the use of copper and bronze in various products. In the sixth century a lot of work was done in the field of medicine and surgery. *Charak Sambita* and *Sushrita* are the finest examples of this. Furthermore, as “Maps of India” website claims:

Around the 5th century BC, the first work of distillation of Zinc by man took place in Rajasthan. The lost wax process was developed in India. Indian mathematicians and astronomers have played an important role in the development of the fundamental concept of celestial science. A great example of the mastery of Indians in the fields of mathematics, geometry and astronomy is the discovery of coins and concrete evidence of maritime trade. Indian mathematicians introduced the concept of zero. Mahaviracharya, the greatest Jain mathematician, mentions the significance of zero. Brahmagupta is another famous Indian Mathematician who was the first one to solve the Pellian equation. Aryabhata introduced the value of the mathematical constant, Pi. The *Bakhshali* manuscript gives rules, examples and solutions to geometric, algebraic and arithmetical problems. Bhadrabahu was another Indian mathematician who solved the Pythagorean Theorem.

However, the overarching definition and concept of science has been broadly universalised, extensively promoted and subtly imposed by the European hegemonic forces over the so called Third World nations of the world. These West-centric discourses of science, however, exclude and deliberately eliminate the possibilities of the role and significance of the local cultural practices of treatment, but unfortunately their impact on the psyche of the Indians was so deep that even an enlightened intellectual nationalist like Har

Dayal (1912) advocated a celebration of science, and argued that the age-old cities of “Benares and Puri have had their day. What is there in Benares but fat bulls and fat priests, what is there in Puri but cholera?” (qtd. in Vishwanathan 42). Har Dayal believed that Pasteur and Koch had done more for human welfare than all the nuns and monks, and held the view that scientists would become the *rishis* (the sages and savants) of this era. His belief in the values of science was further reinforced by Nehru’s strong advocacy of big industries and expansion of modern science, much against the wishes of Gandhi who ardently believed that it is the *swadeshi* technique which will ultimately save the Indians from the dominance of the cruel consumerist forces. Shiv Vishwanathan (1985) says that the institutionalisation of Western science in India began with the establishment of the Great Surveys – the Geological, the Botanical and the Trigonometric – under the inspired impetus of the Asiatic Society of Bengal, which was inaugurated in 1784. This was followed by the establishment of universities in the Presidency towns of Bombay, Calcutta and Madras in 1854. As colonial creations, these universities were not primarily concerned with improving the local culture and economy; they were only agents of the West. Talking about the ills of colonisation, Ashish Nandy writes:

... the drive for mastery over men is not merely a by-product of a faulty political economy but also of a world view which believes in the absolute superiority of the human over the nonhuman and the subhuman, the masculine over the feminine, the adult over the child, the historical over the ahistorical, and the modern or progressive over the traditional or the savage. It has become more and more apparent that genocides, ecodisasters and ethnocides are but the underside of corrupt sciences and psychopathic technologies wedded to new secular hierarchies, which have reduced major civilizations to the status of a set of empty rituals. The ancient forces of human greed and violence, one recognizes, have merely found a new legitimacy in anthropocentric doctrines of secular salvation, in the ideologies of progress, normality and hyper-masculinity, and in theories of cumulative growth of science and technology. (x)

Nandy further argues that the awareness about the process of colonisation

has not made everyone give up his theory of progress but it has given confidence to a few to look askance at the old universalism within which the earlier critiques of colonialism were offered. It is now possible for some to combine fundamental social criticism with a defence of non-modern cultures and traditions. It is possible to speak of the plurality of critical traditions and of human rationality. At long last we seem to have recognized that neither is Descartes the last word on reason nor is Marx that on the critical spirit. (x)

The present paper looks into the subversive devices employed by Amitav Ghosh in his novel *The Calcutta Chromosome* (1996) where he pleads a case for the marginalised natives and their primitive cultural practices and subtly challenges and explicitly dismantles the claims of the science as a West-centric discourse.

Presenting an amazing mix of fact and fiction, Amitav Ghosh meticulously weaves the plot of *The Calcutta Chromosome* around some of the historical events that led to the discovery of the killer Malaria and its cure, while at the same time, the novel also investigates into other relevant philosophical and sociological issues central to the politics of science. Based on the bio-medical adventures of Ronald Ross towards finding out the malaria parasite, the novel could be conveniently categorised as a science-fiction. The novel opens sometime in the twenty-first century with an Egyptian computer wizard Antar in New York who trips through a damaged identity card on his computer. He discovers that the lost person is L. Murugan, a colleague and researcher in Life Watch where he works, and is also the one who has done extensive research on the medical history of malaria. He came to an inference that Ronald Ross who was awarded Nobel Prize in 1906 for his work on the life-cycle of malaria parasite (1898) was heading in the wrong direction and was motivated out of the maze by some people onto the correct path.

Ghosh shatters the superiority complex of the West through falsifying Ross' false belief in himself as conductor of the research. Murugan makes fun of Ross: "He thinks he's doing experiments on the malaria parasite. And all the time it's he who is the experiment on the malaria parasite. But Ronnie never gets it; not to the end of his life" (67). Murugan tries to establish that Ross' research was controlled by the uneducated lower class "dhooley bearer" Lutchman and Mangala, a sweeper woman. Ghosh also dismantles the hegemony of West over East by employing magic realism in his narrative. Through the use of magical realism and mysticism, he presents the underlying themes of the novel. He incorporates elements of mysticism in dealing with the secret religion of silence. Mangala and Lutchman, as members of a secret religious group, believe in the powers of silence and try to conceal their identity. As it could break the code of secrecy, the novel never clearly identifies the beliefs and aims of this secret society. The narrative suggests that this group of people believed in counter science. This group:

started with the idea that knowledge is self-contradictory; maybe they believed that to know something is to change it, therefore in knowing something, you've already changed what you think you know so you don't really know it at all: you only know its history. Maybe they thought that knowledge couldn't begin without acknowledging the impossibility of knowledge. (88)

The narrative also indicates that these secret believers in counter science used secrecy as a technique of their operation. Much unlike the followers of the Western science, these rustic subalterns deeply believe in the importance of silence in promoting their selfless though mysterious advance into medicine and accept it as a religion for them. Even the writer of the twentieth century, Phulobani becomes a member of that secret group and emphasises its importance:

Mistaken are those who imagine that silence is without life; that it is inanimate, without either spirit or voice. It is not: indeed the Word is to this silence what the shadow is to the foreshadowed, what the veil is to the eyes, what the mind is to truth, what language is to life. (24)

The novel projects these people as developers of the most revolutionary technology of all time in the world of medicine and reveals that these people were already ahead of Ronald Ross on malaria research. Through the use of magical and fantastical realism Ghosh establishes the place of Indian folk higher than the Western rationalism by assimilating the elements of supernaturalism, mysticism and myth. In order to underline the importance of the native folk practices of healing, it would be relevant to quote a socio-medical researcher Ajit K. Dalal who believes that freedom from pain and suffering has been a major preoccupation of Indian society since antiquity, like many other traditional cultures. Based on a shared understanding of human nature and the causes of suffering, every society has developed its own healing institutions and practices. The traditional systems so evolved have weathered the vagaries of time, and still thrive in the present times on popular support (Dalal 1). The basic purpose of Folk healing is to help people move away from narrow confines of mundane existence which keep them bogged down, and to offer the larger social and metaphysical possibilities. The method has an unusual therapeutic effect connecting people with their past and future, with living and dead, with demon and divine to broaden their range of experience. Dalal further argues that the various rituals and ceremonies solicit the indulgence of ancestors and departed relatives, who are held as part of the wider support. Consequently, people develop a sense of belonging to a larger cross-section of people and learn to situate their problem in the larger social matrix which is the ultimate way to cure. In a way, the process also leads to the merging of the natural with the supernatural thus facilitating the process of becoming a social being from an individual being in the face of a crisis. Even the modern healing centres dotting the metro cities, not only in India but throughout the world, have come up despite the reluctance of the doubting rationalists of Science. They appear to have continued vigour and support from the various sections of the society where people learn to deal with their personal problems in different alternative

ways. The personal sickness gets exposed to the larger society. The individual's involvement in the ceremony entails that s/he is acknowledged and given due importance in one and the same way as others in the society. Healing occurs through the broadening of the network of relationships (Kapoor).

In 1927, Julius Von Wagner-Jauregg won Nobel Prize for his discovery that artificially induced malaria could cure, or at least alleviate syphilitic paresis, although very little was known at that time about the process in which it worked. But it was only in the 1890s that the underground Indian group, with the mysterious Mangala as their leader had already achieved a significant milestone in this field of research, much ahead of the Europeans. This group had developed a specific kind of malaria that could be cultured in pigeons. One of the main motives of this woman Mangala was to find out a cure for syphilis, a sexually transmitted disease, by way of transporting the malarial microbe to the patient through the bird. The process resulted in swapping “of randomly assorted personality traits, from the malaria donor to the recipient” (206). In the process, they struck upon an unusual chromosome which had been eluding all those modern techniques of detection and isolation. Murugan gives this DNA carrier a name – the Calcutta Chromosome, “a biological expression of human traits that is neither inherited from the immediate gene pool, nor transmitted into it” (207) which could be found only in the non-regenerating tissue, the brain, and could be transmitted through malaria. The story further hints at yet another intention of Mangala and her associates. In fact, they intended to achieve “immortality” through a technique of inter-personal transference of human traits in which all information could be transmitted chromosomally, from one body to another:

When your body fails you, you leave it, you migrate – you or at least a matching symptomology of yourself. You begin all over again, another body, another beginning. Just think, no mistakes, a fresh start... a technology that lets you improve on yourself in your next incarnation....
(91-92)

Mangala is also the representative of the archetypal mother, the Goddess Kali or Durga with all her immense powers of regeneration. A prominent critic, Joydeep Banerjee (2009) feels that Ghosh employs the Goddess metaphor to insist on the necessity of coming back to life. After pursuing a series of experiments, Mangala had come to a dead end of her research in the year 1897 and urgently wanted to have somebody who could carry forward this project. It was precisely at this moment that she chanced upon Ronald Ross, the scientist associated with the discovery of the malaria bug. The unsuccessful attempts left her with the conclusion that with the existing strains of malaria, she could not make any advance in the right direction. In order to have the requisite information, she desperately wanted the British scientist to give a proper

direction to her research. She deliberately put the necessary clues and details into the head of Ross and carefully started manipulating his experiments so as to make him act the way she wanted.

The theme of transmigration and immortality holds a focal point of attention in the novel. The believers of a cult that the soul is immortal and death is nothing more than a change of attire, these primitive characters of Mangala and Lutchman hold their faith in continuance of life. Mangala of the 1890s resurrects into the forms of Mrs. Aratounian, Urmila and Tara of 1995 and Laakhan/Lutchman transforms into Lucky. The changing pattern of names reaffirms the logic of incarnations and reincarnations concerning “the Calcutta chromosome” and thus provides a clue to the text’s preoccupation with perpetuity of soul against the transience of body.

The novel employs the technique of magic realism by mixing and juxtaposing the elements of fantasy with reality and brings in the extra/supernatural machinery and mystery along with the real incidents. When the young Phulboni goes to Renupur, he witnesses the supernatural powers of ghosts and phantoms. It was only after a hard struggle for life that he saves himself from getting killed twice by train – once by the phantom train and again by the real one. Quite like a suspense thriller, the novel depicts the unusual appearance of mysterious things like the lantern, rail siding, ghost station-master, ghost train and the one whose face is wrapped in darkness – Laakhan: “he heard a scream, a raging, inhuman howl that tore through the stormy night. It hurled a single word into the wind – ‘Laakhan’ – and then it was silenced by the thunder of the speeding train” (227).

Taking the help of “magic-realism,” Phulboni portrays an extremely mysterious character in the name of Laakhan who keeps shifting his identities from the postman to a village schoolmaster and so on. Thus, these highly complex and difficult-to-comprehend “Laakhan Stories,” while conveying the supremacy of Silence over Words, also confirm the idea of interpersonal transference of soul.

Ghosh elaborates much upon the religious *tantric* rituals performed by this secret sect for transmigration of soul. He employs the technique of fantastical realism in the narrative so as to amaze the readers by its mystical and supernatural strings. Sonali, who works at the Calcutta magazine, becomes the eye-witness of the same ceremony in Robinson Street, where Laakhan’s spirit is transferred into the body of Romen Haldar and the entire ceremony is performed by Mangala bibi in the form of Mrs. Aratounian:

She caught a glimpse of the tops of dozens of heads, some male, some female, young and old, packed in close together. Their faces were obscured by the smoke and flickering fire light.... A figure had come out of the shadows: it was a woman..... She seated herself by the fire and placed the

bag and the birdcage beside her.... Then she reached out, placed her hands on whatever it was that was lying before the fire and smiled.... Raising her voice, the woman said to the crowd, in archaic rustic Bengali: 'The time is here, pray that all goes well for our Laakhan, once again.'... The drumming rose to a crescendo: there was a flash of bright metal and a necklace of blood flew up and fell sizzling on the fire (138-40).

The novel questions the belief in the grand narrative that liberation of humanity is only possible through science and offers a glimpse into the existence of alternative possibilities. The Calcutta Chromosome developed by the counter science is considered illogical by the proponents of science merely on the grounds that the usual procedures adopted by them cannot codify this unusual phenomenon.

Works Cited

- Banerjee, Joydeep. *The Novels of Amitav Ghosh*. Delhi: Sunrise, 2009.
- Dalal, A.K. "Folk Wisdom and Traditional Healing Practices: Some Lessons for Modern Psychotherapies." *Foundations of Indian Psychology* 5.4 (30 June 2007). 15 March 2011. <http://ipi.org.in/texts/ajit/dalal-folk-wisdom.pdf>.
- Ghosh, Amitav. *The Calcutta Chromosome*. New Delhi: Ravi Dayal, 1996.
- Nandy, Ashish. *The Intimate Enemy: Loss and Recovery of Self under Colonialism*. New Delhi: Oxford UP, 1983.
- Kapoor, R.L. "What is Psychotherapy?" Unpublished Report. Bangalore: National Institute of Advanced Studies, 2003.
- "Maps of India: Science and Technology." 24 Feb. 2011. <http://www.mapsofindia.com/who-is-who/science-technology>.
- Vishwanathan, Shiv. "A Celebration of Difference: Science and Democracy in India." *Science* 280.5360 (1998): 42-43.