

No Time for Empathy

Entangled Temporalities of Pediatric Medical Experimentation in Early Postcolonial India

▼ **SPECIAL ISSUE ARTICLE** in *Entangled Temporalities*

▼ **ABSTRACT** Between 1956 and 1964, in Calcutta, India, at least seven young children with congenital hemoglobinopathies, perhaps more, were injected with various strains of malaria to test their possible immunity. Some of the children were tested on repeatedly. The experiments exposed the already sick children to additional risks and suffering. Strikingly, these experiments started less than a decade after decolonization and were conducted by Indian doctors, rather than colonial doctors. In this article I argue that such tragic practices can only be understood with reference to a set of entangled temporalities. Specifically, the temporal urgency of the postcolonial moment, the absent time of ethical regulations, and the familial tempo of caring for congenitally sick children. The entangled temporalities that authorized the pediatric experimentation, however, would not be visible without the reflexive hermeneutics developed by the Subaltern Studies scholars and nourished by the experiences of academic immigration.

▼ **KEYWORDS** hemoglobinopathies; genetics; blood; Calcutta; Tropical Medicine; Bioethics; malaria

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BREPOLS

Chronology is perhaps the first, though not only, figure in which time appears to the historian. This article is set in early postcolonial India: a period for which there is no extant study of pediatric medical experimentation, or indeed about the ethics of human experimentation in general. For a historian this gap in our knowledge is usually the authorizing fact that justifies an intervention. Yet, as the editors of this issue point out, time is “never only one.”

I take this as an instigation to reframe chronology into an actor’s category. To open up the seemingly stable chronological description “early postcolonial” and expose instead a cacophony of tempos that contributes towards, interrupts and even contradicts this chronological commonplace. This entails asking for whom was it “early postcolonial” and what did it mean, what kinds of actions did it permit or encourage? Contrapuntally, what other tempos—not defined as “early postcolonial”—jostled with the “early postcolonial” tempo? What actions were inspired by these parallel temporalities? Above all, how does looking at the topic through a framework of temporalities advance our understanding of it?

Our ability to answer these questions, expectedly, depends on the politics of the archive. On the one hand, the reports of pediatric experimentation are relatively easy to access. They were published in local, English-language medical journals of the time and are hence not really hidden (though the journals are admittedly poorly preserved). On the other hand, unpublished papers pertaining to the experiments are entirely absent. The cavalier publicness of the reports, stand in stark contrast to the utter impossibility of tracking the thinking and experiences of the actors themselves, whether the experimenters or those experimented upon.

It also forces us to recognize that the cavalier openness stemmed from a combination of the conviction about the necessity of such experimentation and an awareness that there were in fact no ethical regulations to stop such experiments at the time. This was precisely what the postcolonial moment meant: a moment of unbridled opportunity—nay, an obligation—to catch up with the West and exalt the nation through scientific progress. Medical policy-makers had embraced the opportunity and turned a deaf ear to calls for ethical safeguards by citing the needs—both practical and symbolic—of the nation. The chronologically defined moment, “postcolonial,” was thus consciously transformed into an opportunity.

Faced with the limits of the archive and the historicism it authorizes, we have to pivot to other, more dispersed, and less chronologically organized archives. I turn to the Bengali literary archives, uncovering a number of novels and short stories dealing with the kinds of congenital hemoglobinopathies that marked the children subjected to pediatric experimentation.

My choice of the literary archive as well as the methodological move to see postcolonial pediatric experimentation through the question of temporal multiplicity is informed by my own training in the Subaltern Studies tradition and subsequent experience as a diasporic scholar. These have sensitized me

to both the complicities of historicism with modernist forms of hierarchy and power as well as the possibilities for deploying the literary archive as a Derridean ‘supplementing’ to the medical archive.¹

Diasporic Scholarly Time

An “important aspect of [Ranjit] Guha’s work is his attempt to phenomenologically think through the question of heterogenous temporalities ... thereby opening to radical contestation not only the discipline of history but also prevalent conceptions of modernity and contemporaneity,” argued historian and political philosopher, Prathama Banerjee.² Her comments, significantly, were made at a recent conference assessing the impact of Guha and the Subaltern Studies Collective that he inaugurated upon South Asian history-writing.³ This was the intellectual formation within which I had been trained as a historian in late-twentieth-century India. The influence of Guha and Subaltern Studies had rendered the allochronic nature of modernity both phenomenologically available and an object of critique for many of us aspiring to write histories of modern South Asia.

The politics of time, within the Subaltern Studies project, interrogated a fundamental divide in colonial- (and postcolonial-) modern representations of people, events, and indeed, historical writings that parsed these into ‘modern’ and ‘primitive’ / ‘backward’ etc.⁴ Guha and his peers challenged the neutrality of the division between ‘objective facts’ and ‘subjective interpretations’, by drawing attention to the ways in which the politics of time shaped the archive itself, and urged the historian to read their archival sources against the grain.⁵ Finally, Guha inaugurated a set of methodological reflections about generalizations, viz. about narratively stitching individual people, events etc. into this or that linear narrative framework.⁶ Beginning with attempts at structuralist analysis that helped to transcend the politically constituted limits of the archive, he gradually moved towards microhistory and eventually literature as a way of unpicking ways in which a politics of time structured most modern archival

1 On the use of literature for supplementing (*utkranti*), see Guha, *Kabir Naam O Sarbanaam*. On Derrida’s notion of the supplement as something that exposes both the absence within the presence and its inner heterogeneity, see Derrida, *Of Grammatology*.

2 Banerjee, “The Archaic.”

3 Chakrabarty, “A Small History.”

4 Dube, “Mirrors of Modernity.” See also Banerjee, “Debt, Tome and Extravagance.” Beyond the Subalternist project, the argument about politics of time and “denial of coevalness” was made powerfully by a new generation of reflexive anthropologists, such as the hugely influential James Clifford and George Marcus. See Clifford and Marcus, *Writing Culture*.

5 Guha, “The Prose of Counter-Insurgency.”

6 Guha, “Chandra’s Death.” For other explorations of the singular in history undertaken within the Subaltern Studies project see the brilliant Sarkar, “The Kalki-Avatar of Bikrampur.” Beyond the specific Subalternist genealogy of course another well-known case for attending to the singular in history was made by Carlo Ginzburg. Ginzburg, “Microhistory.”

traces.⁷ All this, I imagine, would be familiar to any contemporary historian of South Asia.

Contrapuntally, a reviewer who read an earlier version of this paper, honestly confessed that they “did not follow the argument about temporality.” Likewise, they were underwhelmed by the fact that the whole paper “appear[ed] to be an attempt to explain a single (sic.) actual infection of a child with falciparum malaria.” None of this is surprising or in any way unfair in itself.⁸ Clearly the reviewer is a historian of medicine (probably not specializing in South Asia) and in the canonical literature that they have been trained on, ideas of scholarly and analytical rigor are understood differently. Disciplines and subdisciplines all develop their own notions of analytical rigor and deploy these to judge other works they have to engage with as readers, evaluators or students. These judgments congealed conspicuously in what the reviewer identified as my ignorance of the “state-of-the-art historical writing on human subjects research.”

Dipesh Chakrabarti has pointed out that while those who write on South Asia—and other parts of the Majority World—are regularly expected to and chastised for not being abreast of the cutting-edge scholarship on the Minority World, the favor is seldom returned.⁹ A body of work which has nothing to say about the region I work on can therefore still be called the “state-of-the-art” standard for me. As a scholar, I must thus insert myself into the historiographic present where my subject is absent, while disavowing the historiography which in fact centers my subject.¹⁰

In an essay titled *Migrant’s Time*, Guha distinguished between an immigrant and a diasporan migrant.¹¹ Unlike the former, who was merely distanced from the community they found themselves in, the latter was distanced both from the community they arrived in and the one they left behind. The community of arrival saw them as outsiders and the community of departure saw them as apostates. In Guha’s analysis this double exteriority of the diasporan was in effect a matter of temporality. The individual’s history, that shaped her selfhood, did not align with the host community’s, while her present no longer aligned with her community of departure.

In the case of a diasporan scholar this double exteriority is exacerbated by other exteriorities, of disciplinary training, sense of rigor, perceptions of state-of-the-art etc. But these too are about mismatched temporalities. The

7 Banerjee, “The Archaic.”

8 It is worth pointing out that ethical control of research is not simply about preventing what the profession might consider “real harm” but also about the subject’s right to not be tested on. See Stark, “Victims.”

9 Chakrabarty, *Provincializing Europe*, 28–29.

10 Interestingly, while historians of science and medicine almost uniformly think of the Subaltern Studies Collective as an exotic exteriority, almost half the original members of the collective wrote on the histories of science and medicine Arnold, *Colonizing the Body*; Prakash, *Another Reason*; Hardiman, “Small-Dam Systems”; Chakrabarty, “Community, State.”

11 Guha, “The Migrant’s Time.”

history of the discipline of history in India is different from the history of the discipline of history (of medicine) in the United States.¹² What works one studies to earn one's professional spurs are different. Who is canonized and what questions animate the discipline are distinctive.

It is not my intention to recommend some neat policy solutions around such difficulties in conducting cross-disciplinary and cross-geographic scholarly conversations, though rethinking journal refereeing as a more collaborative process, rather than a gatekeeping function, might help.¹³ My main objective is to amplify the resonance between the allochronic structure of the archival traces I follow and the academic apparatus within which I, as a diasporan scholar, am implicated.¹⁴

On the one hand, the Subaltern historiography of my youth taught me to recognize how social hierarchies in South Asia became temporalized through modernity and, worse still, authorized new forms of bodily violence by the "modern" on the "nonmodern." On the other hand, I learn from historians of medicine like Susan Reverby about the role of "racist and imperial power" in the "limitation of the emotional understanding" of the scientists who conducted the trials in Tuskegee and Guatemala.¹⁵ It compels me to ask whether the lack of "emotional understanding" that inspires and permits human experiments, even on children, can be better explained by interrogating the "temporal disidentification" between the experimenters and the experimented?

Experimental Time

I have been able to identify a number of studies conducted at the Calcutta School of Tropical Medicine (CSTM) between 1956 and 1964 that involved the deliberate injection of various types of malaria parasites into the blood of young children, sometimes as young as eighteen months old, to test their immunity to the disease. Since there is absolutely no extant historical scholarship, nor the kind of official "commissions" that US historians lean on, there is no way of knowing whether these were the only instances in India of pediatric experimentation. Chances are that they were not and that there are many more awaiting historical identification.¹⁶

The so-called "induced malaria" studies that I will discuss in this paper were all performed by Dr. Jyoti Bhusan Chatterjea and his team of researchers. Their intention was to correlate the wide range of then newly-discovered

12 Chatterjee, *The Nation*; Chakrabarty, *The Calling of History*.

13 Mukharji et al., "A Roundtable Discussion."

14 For a fuller account of how scholarly locations resonate with the subjects studied, see Spivak, "Can the Subaltern Speak?"

15 Reverby, "Ethical Failures," 1.

16 See for instance the description of experiments on children in India's premier health facility. Anon., "Patients Experimented."

aberrant hemoglobin varieties with potential immunity from various strands of malaria. The model inspiring these studies was the discovery, in the early 1950s, that the sickle cell trait—which was caused by the so-called hemoglobin S—offered partial immunity to certain strains of malaria.

JB Chatterjea, as he was commonly known, was a giant in postcolonial Indian hematology. He was born on 16th February, 1919 in a small town in Bengal and graduated from the prestigious Calcutta Medical College in 1942. In 1945 he joined the Hematology Department of the CSTM. He obtained his MD in 1949 and the following year obtained a Rockefeller Foundation grant to work at William B. Dameshek's laboratory in Boston. He returned to the CSTM in late 1951 and four years later was promoted to a professorship there. Exactly a decade later, in 1966, he became the Director of the CSTM. When he died, suddenly, on 29th February, 1972, he was still in his position. In his lifetime and afterwards, Chatterjea has been feted and honored in India and abroad. Amongst the various honors he received are the Coates Medal, the Barclay Memorial Medal, the Minto Medal, the Amir Chand Prize and the S.S. Bhatnagar Award. He also served as the Vice-President of the International Society of Hematology, on the Governing Body of the International Standardization Committee of Hematology, as well as on the expert panel on Human Genetics at the World Health Organization.

Chatterjea's research mainly focused on the related subjects of nutritional anemias and hemoglobinopathies. This in turn led him to anthropology and despite being a bench-scientist with absolutely no training in anthropology, he also served as the President of the Indian Anthropological Society (IAS) for two successive terms.

In fact, it is in one of his Presidential Addresses to the IAS that we get a good sense of Chatterjea's sense of time.

Twenty years ago hemoglobin was considered to be more or less the same substance from one person to another. *Today* at least thirty variants of human hemoglobin are known. The implications of these hemoglobins have interested not only clinicians and haematologists but also the biochemists, the anthropologists and the geneticists.¹⁷

And,

Increasing awareness of the condition and improved diagnostic facilities have contributed to the *present-day* knowledge of hemoglobinopathies. The available knowledge is *still* inadequate for India as a whole. Coordinated investigative study covering varied geographical and anthropological parameters must be undertaken with a view to delineating the nature and extent of prevailing hemoglobinopathic disorders in relation to one another and with reference to associated environmental stressors. The

¹⁷ Chatterjea, "Abnormal Haemoglobins and Thalassaemia," 1. Italics mine.

problems of related hemoglobinopathic disorders are *no longer* limited to clinical medicine. Apart from the intriguing and interesting data that abnormal hemoglobins are providing to the anthropologists, biochemists, biophysicists and hematologists, social and public health aspects of hemoglobinopathic disorders pose a significant problem which should be taken note of by all concerned, particularly in a country like India.¹⁸

Two things are clear from this passage, particularly if we attend to the temporal signifiers I have italicized. Chatterjea locates his own knowledge of hematology within a progressivist, linear temporality. For him, “present-day knowledge” had been constituted by an “increase” in awareness that itself was engendered in improved technical facilities. This knowledge was “no longer” of narrow interest to clinicians, but of wide social, intellectual and public import. Yet, and here is the rub, the knowledge available in India was “still” inadequate. “Particularly in a country like India,” this engendered an urgency. Knowledge, in other words, became what Dipesh Chakrabarty called an “imaginary waiting room of history.”¹⁹ Whereas Chakrabarty was referring to historicism, in Chatterjea we see a version of that historicist thinking recast on the register of medical research.

Chatterjea made concrete suggestions to remedy the situation. “Future studies” he said had to now focus urgently on mapping the distribution of hemoglobins in different parts of the country and in different castes and communities. Particularly useful would be mapping the correlations between different types of hemoglobins and distinctive exposures to malaria. All the studies had to use standard protocols to make the results globally comparable. For the sake of urgency and convenience, particularly important were studies focused on “a) school children, b) industrial workers, c) blood donors, d) hospital in- and out-patients.”²⁰ All this would also require more investment in training personnel, opening more research centers and devoting funds to buy more equipment.

Unlike historicism in many other realms, medical historicism also came prepackaged with a visceral urgency. Chatterjea argued that a critical survey of all patients presenting clinical signs of “splenomegaly, jaundice and refractory anemia” across India “would indicate that hemoglobinopathic syndromes constitute a significant problem in India.” Without such investigation, these syndromes might be misdiagnosed as parasitic diseases or nutritional deficiencies, and thereby—notwithstanding recent improvements in controlling parasites and enhancing nutrition—adversely affect the overall health of the country.²¹ Lives were clearly at stake, as was—perhaps more importantly, “the health of the nation.” Enhancing knowledge of abnormal hemoglobins,

18 Chatterjea, “Abnormal Haemoglobins and Thalassaemia,” 13. Italics mine.

19 Chakrabarty, *Provincializing Europe*, 8.

20 Chatterjea, “Abnormal Haemoglobins and Thalassaemia,” 14.

21 Chatterjea, “Abnormal Haemoglobins and Thalassaemia,” 11–12.

their “racial and geographic distribution” and their relationship to infectious diseases like malaria, could save lives of individuals and strengthen the nation.

It was this visceral urgency to save lives and ensure the future of the nation that also produced an opportunism. Hemoglobin variants were rare, and data on them scarce. To make matters worse some of the variants, particularly in homozygous form, were potentially lethal and those individuals born with these variants rarely survived into adulthood. All this meant that whenever a patient with such a variant form was found in a hospital, the researchers had to optimize the opportunity and gather as much data about the case as possible. A clinical encounter with a patient thereby became a moment of opportunity: the time of crisis for the patient—which brought them into the hospital—became a resource for the researchers.

It was precisely this temporal opportunism that framed Chatterjea’s pediatric experimentation. At a time when new hemoglobins were being detected regularly without much clear sense of whether these variations had any significant physiological consequences, being able to test their relationship with different strains of malaria was an urgent need. Children admitted to public hospitals, usually for anemias resulting from the hemoglobin abnormalities, were a ready resource. Researchers could rapidly gain knowledge by “inducing” malaria in these children. The fact that the CSTM, one of the leading medical research institutes in the country, was located in close proximity to the Calcutta Medical College Hospital also made it unusually well-positioned to take advantage of the kinds of equipment, such as electron microscopes, that were then rarely handy in Indian hospitals.

The first study was likely carried out in early 1956. It was published in July 1956 and involved five subjects, all of whom were patients at the hospital. Of these five, two were children. A boy of twelve who was in hospital for splenomegaly and a girl of five (or seven, two different ages are mentioned) who was suffering from “severe thalassemia” were injected, along with the other three adults, with *plasmodium vivax* taken from the blood of another patient admitted to the hospital with malaria.²² The following year, in 1957, Chatterjea again carried out pediatric experiments on two young children, both boys, aged nine and five years. They had originally been referred to the Hematology Clinic due to suffering from “thalassemia of severe degree” in 1953. The brothers upon being treated and released, returned to their home in the Burdwan district. It was only when they returned to the hospital for a blood transfusion in 1956 and were admitted as in-patients that Chatterjea got to experiment on them. Detailed studies now showed that the brothers carried a combination of thalassemia and hemoglobin E. In early January

22 Chatterjea et al., “Response to Tropical Splenomegaly”; A year before Chatterjea’s studies, two other Calcutta doctors working at another hospital carried out a very similar study. Amongst those infected with malaria parasites in that study, two were children - both boys respectively aged 10 and 16 years. Konar and Roy Choudhury, “Response.”

1957 Chatterjea injected both brothers with the potentially fatal *plasmodium falciparum* and mapped changes in the blood picture of the next month. Though the malaria infections were controlled right away. The boys remained in hospital until at least late February and suffered from high temperatures caused by an “aplastic crisis” that Chatterjea himself believed to have been a delayed but putative consequence of the malaria infection. They were also subjected to painful tests, such as the extraction of bone marrow, in order to monitor the development of the infection.²³ In 1964, Chatterjea was part of another team that experimented on children. This time the trials included eighteen people and the ages of all of the participants were not mentioned. But in discussing the results, they did mention that a few of them were certainly children. One was a homozygous thalassemia patient aged one and a half years. At least one was a heterozygous thalassemia-Hb E child aged six years, while another was fourteen years old. Most of these children were injected with *plasmodium vivax* and their reactions were mapped. The fourteen-year-old thalassemia-HbE patient was first injected with *p. falciparum* in 1957 and then with *p. vivax* in 1960.²⁴

All the subjects were patients admitted to or referred to the hospital in Calcutta, from around the province of Bengal and its neighboring areas. The nature of conditions like thalassemia also meant that many of the children had to return time and again for blood transfusions. There is no mention of the kind of backgrounds they hailed from, but a general report written on so-called “chronic splenomegaly” by two of Chatterjea’s colleagues stated that, “they are mostly from the poor class of society in the rural areas of Bengal.”²⁵

Interestingly, Chatterjea’s willingness to engage in pediatric experimentation contrasted with the studies that had originally inspired the question of hemoglobin-induced resistance to malaria. A. C. Allison’s 1954 study in British East Africa that Chatterjea repeatedly referred to had indeed studied a large group of Ganda children, but he had merely correlated the existence of the sickling trait with the presence of malaria parasites in the blood. He had not induced malaria in the children. He did, in the same study, report the artificial infection of human subjects, but these were all adults, members of the Luo tribe.²⁶ Other studies by British hematologists working in East Africa on the same question, also tended to rely on mapping the co-presence of hemoglobin variations and malaria parasites in the blood, rather than artificially producing infections. Even when malaria was ‘induced’ it tended to be in adults.²⁷ In 1957, when Allison reviewed the extant studies on malaria and sickle cell trait, he only mentioned two studies that had used artificially induced malaria in human patients. These were his own work on the Luo adults and the 1955

23 Chatterjea, “Aplastic Crisis in Haemoglobin.”

24 Ray, Chatterjea, and Chaudhuri, “Observations on the Resistance.”

25 Chaudhuri and Saha, “Chronic Splenomegaly in Bengal,” 86.

26 Allison, “Protection Afforded by Sickle Cell.”

27 Edington and Laing, “Relationship between Haemoglobins.”

study by Ernest Beutler, Raymond Dern and C. Larkin Flanagan that infected sixteen African American inmates of the Illinois State Penitentiary in Joliet, Illinois.²⁸

Though Allison's review did not refer to Chatterjea's studies, if the former's review was generally comprehensive, it would suggest Chatterjea might have pioneered the use of pediatric subjects for studying the relationship between malaria resistance by artificially infecting patients with hemoglobin variants. The earliest similar study using the deliberate exposure of children with abnormal hemoglobin to malaria that I have found is a 1961 study in Thailand.²⁹

While Chatterjea might have been the first to use pediatric experimentations to settle this particular question, the use of pediatric subjects in clinical trials more generally was not unusual in countries like the United States. It was, for instance, precisely in this period between 1950 and 1970 that Saul Krugman of the New York University conducted trials at the Willowbrook State School for the severely mentally retarded which involved the deliberate infection of newly arrived children with strains of the hepatitis virus. Indeed, in time it was the Willowbrook study that contributed towards the calls for greater regulation of such medical experimentation.³⁰

What is clear then is that Chatterjea's pediatric experimentation, while not entirely novel—at least at a general level, was still far from the standard practice in his field. He made a choice and one that was almost certainly motivated by the sense of urgency his medical historicism inspired.

Ethical Time

The Helsinki Declaration of 1964 was widely known and discussed in India, but not instituted as a law or guideline. The Indian Council for Medical Research [ICMR] only issued its first 'Policy Statement on Ethical Considerations involved in Research on Human Subjects', in February 1980. But this too was widely flouted. Most notoriously one study that ran through the 1970s and 1980s left 1158 women with cervical dysplasia and precancerous lesions in the cervix untreated to see how many would develop fully-fledged cancers. It was only after this came to light in 1997 that the ICMR started developing more robust guidelines for biomedical research. Even then, writing in 2011, J Sanmukhani and CB Tripathi lamented that no one in India adequately followed the guidelines that emerged. They regretted that doctors are "trained to be good clinicians but never taught even the fundamentals of ethical clinical research."³¹ Clearly, then, Chatterjea and his colleagues were neither violating any existing ethical guidelines nor indeed breaking with the

28 Allison, "Malaria in Carriers."

29 Kruatrachue et al., "Haemoglobin E and Malaria."

30 Lederer and Grodin, "Historical Overview: Pediatric Experimentation," 17–18.

31 Sanmukhani and Tripathi, "Ethics in Clinical Research," 130.

norms of biomedical culture in postcolonial India. The question we must ask however, is whether the absence of ethical regulations is tantamount to the absence of ethical choices?

One of the key arguments against any moral or ethical critique of historical human experimentation is to say, “we cannot use present day standards to judge the past.” As a historian, I can hardly deny this. But what I can do as a historian is to recreate the actually existing ethical choices of the time to represent the discussions on medical ethics that were already taking place at the time and that the researchers very likely knew about.

Willowbrook notwithstanding, it is important to recognize that ethical concerns about pediatric experimentation were not entirely unheard of at the time that Chatterjea embarked on his trials. In 1935, for instance, a large controversy erupted in the US on the trials of two polio vaccines conducted on children. As a result of the controversy all research into polio vaccines stalled for twenty years.³² Given the scale of the controversy and the fact that Chatterjea had himself worked for two years in Boston between 1950 and 1952, it is quite likely that he would have been aware of the debates around it. Even more plainly, the fact that British doctors working in imperial settings, such as Allison, who were engaged in very similar research still did not take recourse to pediatric experimentation was known to Chatterjea.

Besides these immediate discussions, some Indian—and indeed Bengali—doctors who would have certainly been personally known to Chatterjea were also involved in the ethical discussions that had commenced after WWII as a result of the horrors of Nazi medical experimentation. Thus, even though the Nuremberg Code developed at the trial of the Nazi doctors was not immediately taken up in most countries, including India, the ethical concerns and discussions arising from it were certainly known in Chatterjea’s circles. It was the Nuremberg Code that made informed, voluntary consent by the subject a central requirement of human experimentation. While the Code itself was not immediately legally adopted by several countries, including India, it did provide a provocation and a horizon for ethical debates over human experimentation in the post-WWII world. Moreover, it was in fact physicians who played a crucial role in the development of the Code during the Nazi doctor’s trials.³³

There is every reason to believe that Chatterjea and his peers would have been aware of the debates of the Nuremberg trial. The trial was reported in some detail in the Indian press.³⁴ Moreover, one of the defense attorneys, in his bid to defend the Nazi doctor Karl Brandt, had made extensive use of the induced malaria experiments in American prisons.³⁵ This reference to precisely

32 Lederer and Grodin, “Historical Overview: Pediatric Experimentation,” 14–15. Offit, *The Cutter Incident*, 4–18.

33 Shuster, “Fifty Years Later.”

34 Anon., “Hitler’s ‘Mercy Killing’ Edict.”

35 Miller and Moreno, “Human Infection Challenge Experiments.”

the kinds of studies Chatterjea himself was interested in would very likely have been discussed within the international research networks in which he was embedded.

Even more well-known in Chatterjea's circles would have been the protracted, if somewhat refractory, debates in the World Medical Association [WMA], in the wake of the Nuremberg Code. Capt. Dr. Satis Chandra Sen, a Cambridge-educated Bengali radiologist, who served as President of the Indian Medical Association for two consecutive terms from 1953 to 1955, also served on the Council of the WMA from the mid-1940s through to the mid-1960s.³⁶ Through him, the WMA developed a strong presence in India and in 1962 even held its annual meeting in New Delhi. To underline the importance of the event, both the President of India, Sarvapalli Radhakrishnan, and then-Prime Minister, Jawaharlal Nehru, attended the opening session of the meeting.³⁷

Only two years after the Delhi meeting, in 1964, the WMA finally came up with a tangible result to their long-running discussions in the form of the Helsinki Declaration. Though the Declaration, arguably, sought to replace the Nuremberg Code's emphasis on informed consent by a peer review mechanism, it also implicitly acknowledged the authority the Code had already acquired.³⁸ Whatever one makes of the Helsinki Declaration and its relationship to the Nuremberg Code, what is indisputable is that Chatterjea was extremely well-placed to have been aware of these high-profile debates on medical experimentation on humans. Sen's involvement and the importance given to the WMA in India would have meant that the discussions happening there would have been heard in India, at least in the elite Bengali medical circles that Chatterjea inhabited. The same international medical networks that gave him access to the latest medical research questions, also positioned him admirably to pick up on the emergent ethical debates of the day.

The absence of a legal obligation is not tantamount to a lack of ethical options. Instead of seeing the absence of legal mandates as, once again, an "opportunity," the researchers might well have chosen to exercise the ethical choices that they surely knew existed. The experimentation did not take place in the absence of historically conceivable ethical choices. Rather it would be fair to say that the absence of laws was simply seen as a moment of opportunity. In other words, the historical moment itself became a kind of resource in which pediatric experimentations could be conducted.³⁹

36 Anon., "Messages from Past Presidents."

37 Gilder, "World Medical Association Assembly."

38 Shuster, "Fifty Years Later," 1440.

39 The argument I am making here about time as a resource is similar to and inspired by Adriana Petryna's argument about drug companies using uneven global regulation of drug trials as a resource, see Petryna, "Ethical Variability."

Familial Time

The children and their families upon whom Chatterjea and his colleagues experimented are lost to history. There are no records of their voices, views, and vocations. The terse prose and the nameless ciphers to which the identities of the pediatric subjects are reduced in Chatterjea's publications do not allow us any liberties to flesh out the temporal, or even general, outlooks of the pediatric subjects and their guardians. This is where literature becomes an invaluable archive.

The same "growing awareness" that Chatterjea spoke of, had also inspired a literary archive of thalassemia and related hemoglobinopathies. I have been able to locate four Bengali literary narratives that were centrally or significantly concerned with the lives of those suffering from hemoglobinopathies. All four were written within the last seventy years and two of these were authored by well-known and critically-acclaimed authors. There are likely several more that I have not yet found. The four narratives are, Pratapaditya Deb's short story *Rakta* ('Blood', 1959), Saktipada Rajguru's short story *Duhsamay* ('Misfortune', n.d. [1962?]), Shyamal Gangopadhyay's novel *Mahajeeban* ('Great Life', 1962) and Ahmed Murtaza Choudhuri's short sketch *Mukh Dekhe Jaye Na Chena, Ghatak Byadhir Naam Thikana* ('Can't Recognize the Fatal Disease by its Face', 2017).⁴⁰

The varying lengths—from a single page to nearly two-hundred pages—and the varying literary quality of the narratives notwithstanding, there are certain common features that appear in all four, particularly the temporal structure of these narratives. To begin with, all of them are located squarely within the temporality of familial everyday lives, marked by mutual obligations of care, affection, expectation, and so on within members of a family. In Deb's *Rakta* for instance, despite its brevity—its only about three pages, we meet a couple, their two children and the husband's mother. Each of them is characterized by their mutual relationships with each other: specific forms of everyday care, affection, responsibility etc. Likewise, in Rajguru's somewhat longer narrative again we see a whole cast of characters, from a couple, their sick child, the wife's father and the husband's mother, and even an old family servant. Each of them is once again attached to one another by mutual ties of responsibility and affect, even when—such as in the case of the wife's estranged father—he initially repudiates his obligations towards his ailing grandson and eventually repents for having done so.

Second, in each of the narratives, we see thalassemia with its chronic suffering transforming these relationships by putting them under immense temporal strain. The rising medical bills, for instance, need additional incomes and that leaves little time for the performance of the expected mutual forms of familial care. Likewise, the regularity of blood transfusions dislocates existing temporal

40 Deb, "Rakta"; Rajguru, "Duhsamay"; Gangopadhyay, *Mahajeeban*; Choudhuri, "Mukh dekhe jaye na."

rhythms, making it difficult once more to sustain extant obligations. In *Duhsamay* we see a husband and wife who had been deeply in love and married in the face of familial opposition, gradually drifting apart and struggling to hold on to their marriage due to the pressures brought on by the new financial and medical needs of their thalassemic son. In *Rakta*, similarly, we find a husband and wife becoming distanced from each other as well as their children because they need to work extra shifts to pay for their son's treatment and special diet.

Perhaps the greatest pressure exerted by the disease within the everyday familial temporality, was due to it jeopardizing one of the key functions of the family, i.e., reproduction. Both the death of sick children and the fear of having children due to the inheritable nature of the affliction, undermined one of the crucial social and temporal functions of families. In *Duhsamay* we see the family's only child dying and thereby threatening to bring the wealthy and eminent family to an end. In *Mahajeeban* we see the thalassemic wife repeatedly wanting to conceive a child, despite the potential risk to her own life, but the husband deterring her for fear of losing her.

Remarkably, this challenge to the biosocial reproduction of the family is reoriented as an opportunity: an opportunity to rethink kinship itself. In *Mahajeeban* we find the couple, unable to have children, adopting a stray puppy and showering it with all their parental love. In *Duhsamay*, faced with the death of their only child, the family decides to use their resources to help other children with the same disease and explicitly characterize the act as acquiring a much larger family than before. The parents come to see all the children they serve through their hospital as part of their family.

Whereas genetic models of inheritance studied by Chatterjea and others naturally operationalized a strictly biological notion of the family, the literary narratives saw the disease as an opportunity to expand the notion of a family along more-than biological lines. This might seem like an obvious point but it comes wrapped up in its own temporal logics. The biologized notion of a family is organized around lines of transgenerational inheritance over several generations. By contrast the adoptive families proposed in the literary archives remain implicated in a much more limited temporality of child-rearing and face-to-face generational ties that seldom extends beyond a couple of immediately successive generations. All the narratives we have been discussing mention only grandparents, parents, and children. The three generations involved in putative affective ties and rearing.

Interestingly, the nation-state, India, which looms large in Chatterjea's temporal frame is a marginal, even incidental, presence in the literary archive. Like Chatterjea the litterateurs too seem to characterize the country as lacking. Yet, whereas for the former this lack is something to be urgently addressed and overcome, for the litterateurs there is no expectation of an imminent overcoming. Rather the nation-state's lack of support infrastructure means that families and friends have to step up and support chronically ill patients. In *Mahajeeban* the family undertakes to organize regular blood donation camps

to collect the blood needed for transfusion. The blood thus collected is then exchanged at the state blood bank to get the blood of the appropriate group according to a scheme that allowed individuals to obtain blood from the blood bank for free in lieu of an equal amount of donated blood. The logistic and social challenges of holding regular blood donation camps to source the blood to be thus exchanged is clearly also an instance of a lack in state-infrastructure being off-loaded onto the family and friends of patients. In *Duhsamay* the family eventually works with an altruistic doctor to establish a private hospital especially for those suffering from thalassemia. Though neither narrative explicitly frames such acts of giving as critique per se, following the recent accounts of blood donation camps in India by Dwaipayan Banerjee and Jacob Copeman, one might easily read into such acts of fictionalized philanthropy an understated lament about the lack of care exhibited by the state.⁴¹

Put simply then, the litterateur's temporality operates at a much humbler scale. It is not the temporality of global modernity or national catching up. It ranges neither across wide swathes of territory nor over multiple genetically linked generations in large, racialized populations. Instead, it is a temporality implicated in the everyday activities of familial life. It's routines of caring and rearing. It's face-to-face intimacies and frustrations.

Under severe strain, this temporality tried to rethink its own parameters. It did so not with a view to catching up with a foreign ideal but to supplement the impoverished infrastructural support provided by the state. In the process it also sought to fulfill its own affective horizons. The family reimagined in the face of the growing burden of thalassemia attempted to expand the logic and temporality of everyday familial care to intimate neighbors, both human and nonhuman.

Rereading Chatterjea's temporality through this literary archive offers us two insights. First, the sheer lack of care infrastructure and burdens of caring for a sick child help us better understand how and why children came to hospitals. It compels us to confront the pressures under which families labored to provide regular transfusions for their children and thereby acknowledge the sheer impracticability of having any meaningful consent mechanism. Though Chatterjea and others do not even mention the issue of consent, the difficulties in availing of transfusions on a regular basis suggest that whether or not the experimenters sought parental consent there would likely be very little scope for parents to actually exercise meaningful autonomy of choice under the conditions. Second, it shows us precisely what is missing in Chatterjea's accounts of hemoglobinopathies. For him it is the progress in knowledge, the nation-state's need to catch up etc. that are at issue. Utterly missing in his numerous publications on the subject is any trace of the familial and everyday milieu within which the suffering of patients—and particularly pediatric patients—were transacted. The familial, the affective and the everyday, have

⁴¹ Banerjee and Copeman, "Ungiven: Philanthropy as Critique."

been utterly excluded from the experimental framing of the pediatric patients. It is this absence, that forestalls any sustained ethical reflections. The rendering of the patients as atomized, biological entities, rather than as children at the center of multiple affective ties, must have made it relatively easier to expose them to unnecessary risks and more suffering.

Conclusion

It would not surprise anyone that scientific articles and literary narratives speak of the same topic differently. Indeed, it would be obvious. But what is less clear is precisely how these two archives differ. What is it that makes the scientific and the literary archives distinct? More importantly, what are the possibilities—political, affective, epistemic, and ethical—baked into them?

What I have shown in this paper is that one of the key contrasts between the two archives is in the way they temporalize their subject. These distinctive temporalities, in turn, redistribute affect, urgency and the possibilities of ethical action.

The researchers who experimented on children conceived and narrated their projects within a temporal framework that I have called “medical historicism.” Medical historicism had three main markers: a global present of constantly progressing medico-scientific knowledge, a national present that fell short of this global present and hence was “backward” and, finally, an ardent wish to ‘save lives’ (notably, not any individual life) and improve ‘national health’. It was this medical historicism that produced and authorized an appetite for human experimentation and invested it with an urgency all its own.

Notably, the urgency produced by medical historicism was distinct from the urgency that might have been inspired by clinical reports of children suffering or even the literary narratives of families falling apart while dealing with an inadequate care infrastructure. This was a specific form of urgency whose end points were more hematological experiments and whose fulfilment—at least potentially—lay in epistemic equality with western centers of medical knowledge. It did not deal in the provision of clinical care or social support for ailing children and their caregivers. Urgency and the affective charge to “save lives” both operated on a scale of national and scientific time, rather than of specific patients, families and clinical encounters.

The experimentations could happen because there was seemingly a gap in the ethical moment. The discussions around the Nuremberg Code and the Helsinki Declaration had already made medical ethics and especially human experimentation a matter of global concern, but these were not yet legally binding in India. Though the legal gap did not mean the ethical options were unknown, the experimenters were at liberty to ignore these if they so desired. It is worth recognizing that the same experimenters who were at pains to

bring India up to international standards of medical research, were cavalier about international ethical standards. At the risk of being banal, one could say there was no legal obligation to “catch up” with foreign medical research, yet scientists like Chatterjea perceived such a need. But when it came to ethics, there seemed to be no such enthusiasm. Instead, the historical moment marked by a legal absence, almost became a resource.

By contrast, the literary archive rendered its subjects within an affective temporality of everyday familial care, that was then put under strain by the chronic, expensive, and inheritable nature of the hemoglobinopathies. Medical knowledge, by itself, did not save lives in this rendering. Experimentation was not discussed putatively, but a framework of expansive kinship and empathy that was articulated would make the deliberate infliction of additional suffering on already ailing children—even when they were not one’s own biological kin—unimaginable. The scale at which this time operated made the researcher’s medical historicism redundant and viewed the nation-state merely as part of an unhelpful backdrop.

Distinctions apart, these tempos all intersected, enabled and contradicted each other. The experimenter’s opportunistic experiments could only happen because of the acts of care that brought children from far away villages to urban hospitals. The gap in regulations could both be produced and utilized at moments which already juxtaposed the familial and the experimental temporalities in the clinic. But it is equally important to remember that these intersecting cracks in time themselves only become visible within the splintered temporalities of a diasporic scholarly existence.

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