RESEARCH PAPER

Historiographic Metafictional Portraits of Twentieth Century Scientists in Labatut’s When We Cease to Understand the World

Dr. Aamer Shaheen ¹  Mehran Ahmed ²  Sadia Qamar*³

1. Assistant Professor, Department of English Literature, Government College University, Faisalabad, Punjab, Pakistan
2. BS (Hons), Department of English Literature, Government College University, Faisalabad, Punjab, Pakistan
3. Lecturer, Department of English Literature, Government College University, Faisalabad, Punjab, Pakistan

PAPER INFO

Received: August 11, 2021
Accepted: December 23, 2021
Online: December 25, 2021

Keywords:
Benjamin Labatut, Historiographic Metafiction, Postmodernism, Science, When We Cease to Understand the World.

*Corresponding Author
sadiaqamar@gcu.edu.pk

Introduction

The twentieth century witnessed the birth of Quantum Physics, leading to nuclear science, and the internet thus forever changing the world in a way no one could imagine. The present technological advancement was engendered by names
like Einstein, Schrödinger, and Heisenberg, the titans of technology towering on their toils. Benjamin Labatut’s *When We Cease to Understand the World* picks certain individuals who revolutionized science and mankind with it as its subject-matter. However, Labatut’s focus is not on the surface, but on the bleak secrets of sacrifice, madness and destruction hidden beneath the shimmering shells of scientific development. Similar to the throes of a woman in labor, the minds of luminaries like Arthur Grothendieck, Erwin Schrödinger and Werner Heisenberg bring something wonderful into the world only after excruciating pain. Labatut, in his “work of fiction based on real events” (p. 189), places the reader inside these most brilliant minds with their strokes of unparalleled genius, seating them on the front-seat of a wild ride on the downward spiral of isolation and insanity. They alienize friends and lovers, either paving the way to progress or serving to unleash chaos and suffering on humankind.

*When We Cease to Understand the World* is, in the words of Ruth Franklin “a sequence of accounts that skew biographical but also venture into the terrain of imagination […]. The stories in this book nest inside one another, their points of contact with reality almost impossible to fully determine” (*The New Yorker*, 2020) Each section of the novel revolves around one of the scientists in question. “Prussian Blue”, the first chapter focusing on Fritz Haber, reads like a section out of a science history book. However, the novel turns more inward and complex with every chapter. The progression of chapters is a descent further and further into the psyche of the individual the chapter centers on. With every chapter, the world turns more and more perplexing and uncertain for the scientist and the reader alike, reality mingles with imagination in the narrative, and the ‘real’ world loses its authenticity as absolute and unchanging.

Through the chapters, we move from gases and chemicals to Einstein’s equations of general relativity, which lead us into the abstract galaxies of the mathematical universe, only to find ourselves in the quantum realm, where the past mysteries and questions seem to lose their importance, becoming unreal in the face of another seeming unreality. The account of Werner Heisenberg and his formulation of the uncertainty principle, which asserts that it is impossible to determine a particle’s position and wavelength at the same time, is symbolic of the present world. When we think that we are making forward scientific progress, inching closer to discovering the secrets of the world, we have the realization that doors open only to present more doors, sturdier and with more intricate locks.

The conclusion is that the mysteries of the universe become more unfathomable as they are solved, the answers eluding us the closer we get to them. Humans walk in cycles, treading over the same path again and again over the course of centuries, unable to delineate the lines between progress and insanity. Every discovery opens new, broader avenues which are as much highways to horrors as they are pathways to progress. The question is that, when we cease to understand the
world, why do we thrust ourselves forward with renewed gusto towards further mysteries? If every mystery tosses us into deeper and bleaker pits, do we even want to find the horror that awaits us at the end? Is the light at the end of the tunnel sure not to disintegrate us into particles like the victims of Hiroshima and Nagasaki? Are we certain that, instead of enlightening, it will not blind us, melt our flesh off our bones, plunge us into an inescapable darkness, a veritable Schwarzschild’s singularity?

Literature Review

When We Cease to Understand the World was met with stellar reviews from critics, finding its way into the shortlist of the International Booker Prize 2021, sharing the field with David Diop’s At Night, All Blood is Black. The host of reviews praised Labatut for his success in casting brilliance vis-à-vis madness. Most critics were enamored by the blending of fact and fiction in the novel, blurring the lines between history and imagination, lending the narrative a harrowing authenticity. The absence of demarcation between fact and fiction, not being clear about where one ended and the other began, arrested the readers, generating an effect as horrifying as it was absorbing.

John William in a Review Podcast described the novel as “a gripping narrative of obsessed scientists, world-changing discoveries, and the ultimate results - often quite dark - of our drive to understand the fundamental workings of the universe” (The New York Times, 2021). Catherine Taylor reads the novel as an “exquisitely written and continuously fascinating hybrid work of fiction and history”. Concerned with “the link between genius and insanity, science and ethics,” the novel with its “huge imaginative flair and empathy” explores the backstories of some of the great “mathematicians and physicists of the 20th century” who played a pivotal part in changing our understanding of the world (The Irish Times, 2020). “Darkly dazzling” are the words Sam Sacks uses to heap praise on the novel. He believes Labatut “illuminates unexpected and often darkly ironic connections between scientific discoveries” exposing the insanity at play in the background, showcasing “the minds seeking to pierce the mysterious heart of
mathematics” and how they may harbor secrets best left unknown (*The Guardian*, 2020).

The brief review of a spate of the stances of different reviewers reveals a common position; viewing the novel as an undermining of entrenched scientific and historical discourses by mingling fact and fiction together with beautiful prose and a breakneck pace, delving into the depths of the human mind and its excellence, which is often less than a step away from coursing into madness. The hubris of human beings makes them run in circles like a dog chasing its own tail. Just when the goal is within grasp, it flits out of reach, and the chase resumes.

**Theoretic Framework**

Linda Hutcheon in *A Poetics of Postmodernism: History, Theory, Fiction* (1988), writes, “the process of narrativization has come to be seen as a central form of human comprehension, of imposition of meaning and formal coherence on the chaos of events” (p. 121). It is through narrating the historical events that we make sense of them, trying to rein in their chaos with the bridle of order, to as much an extent as possible. However, this narrativization of events sacrifices its own authority as an authentic account of ‘what happened’. There is no dearth of accounts, accounts that are rarely entirely corroborative of what they convey. In the end, the question isn’t, ‘what’s the truth?’ It is “whose truth gets told” (p. 123). There are always people who dominate history, pushing others to the margins. Historiographic metafiction seeks to narrate events from the perspective of these “ex-centrics”.

The problem historiographic metafiction has with the past isn’t that “the past once existed but that our historical knowledge of it is semiotically transmitted” (p. 122). Historiographic metafiction is preoccupied with both history and fiction, more with their similarities than their differences. Hutcheon writes that novels falling under the rubric of historiographic metafiction “both install and then blur the line between fiction and history” (p. 113). It “keeps distinct its formal auto-representation and its historical context, and in so doing problematizes the very possibility of historical knowledge, because there is no reconciliation […] just unresolved contradiction” (p. 106), as fiction and history are left mingled, no clear demarcation present between them.

In historiographic metafiction, “life and art meet” (p. 108), birthing “a narrative world” that is “representational but still separate from changing experience and historical process.” In this world, “there is rarely falseness per se, just others’ truths” (p. 109). To further bolster this narrative world’s authenticity and sense of reality, “the real figures of the past are deployed to validate or authenticate the fictional world by their presence, as if to hide the joins between fiction and history in a formal and ontological sleight of hand” (p. 114). Labatut goes beyond that, opting
to historical figures at the heart of his work, instead of limiting them to cameos or supporting roles. It may be possible to separate the fact from fiction, but the possibility of the ‘fiction’ in the novel being the facts unrecorded in history cannot be repudiated. Labatut, by mingling fact with fiction, is not that different from historiographers.

Historiographic metafiction and the non-fictional novel “stress the overt, totalizing power of the imagination of the writers to create unities” (p. 116), the power not absent from the writers of history, as prone to flights of imagination as the writers of fiction. By blurring the line between history and fiction, historiographic metafiction makes us “question received versions of history” (p. 115). Historiographic metafiction “directly confronts the past of literature”, fueled by “a desire to rewrite the past in a new context” (p. 118). “To re-write or to re-present the past in fiction and in history”, as historiographic metafiction does, is to “open it up to the present, to prevent it from being conclusive and teleological” (p. 110). This is observed in When We Cease to Understand the World, as Labatut’s prose presents individuals of immense importance in a less than flattering light, unlike the almost hagiographic accounts of men of science. With the power of his prose and imagination, Labatut subverts the status enjoyed by not just history, but science as well.

Discussion

Scientific progress in the twentieth century has proven to be climacteric. The internet, smartphones, computational prowess are a few among many results of that progress. Labatut discusses some of the distinguished individuals behind the scenes of this progress, by putting a different, darker spin on events with the fervor of his prose. Science is not benevolent in its discovery or the effect of that discovery. It exacts a terrible price from those seeking it, allowing them a glance at the truth only after they have proven themselves worthy through sacrifice. Heisenberg arrived at his scientific conclusions only after he “seemed to have gouged out both his eyes in order to see further” (p. 110).

These discoveries prove to be as marvelous and malevolent as their root. As Alexander Grothendieck contends within the text, “The atoms that tore Hiroshima and Nagasaki apart were split not by the greasy fingers of a general, but by a group of physicists armed with a fistful of equations” (p. 75). Mathematics, physics, quantum science, the characters of the novel prioritized these disciplines over their families, their friends, their bodies, and their sanity. Science was their god and in serving it, it exposed them and the whole of humankind to a terrible suffering. Labatut’s novel gives the impression of a wake-up call to the followers of this god, a call to stop and reconsider before they reach the point of no return, before they cross Schwarzschild’s limit.
Agonies of Conception

“Suddenly, without warning, his feverish activity was interrupted and was replaced by a kind of fascination. He spent several days as if he were bewitched, softly repeating to himself a string of fearful conjectures without giving credit to his own understanding. Finally, one Tuesday in December, at lunchtime, all at once he released the whole weight of his torment. The children would remember for the rest of their lives the august solemnity with which their father, devastated by his prolonged vigil and by the wrath of his imagination, revealed his discovery to them: ‘The earth is round, like an orange’”. (Marquez, 2014, p. 5)

The above passage from Gabriel Garcia Marquez’s landmark novel One Hundred Years of Solitude serves as the perfect summary of the narratives of scientific discoveries in When We Cease to Understand the World. Wonder about the inner workings of a phenomenon to the point of obsession and isolation, followed by fever leading to fascination; a loss of self and the feeling of one’s mind not being his own, finally birthing a discovery met with the utter disbelief of others, upending all dominant notions of the time, are the steps which the great minds in Labatut’s scientific-fiction-cum-horror-story When We Cease to Understand the World either climb or descend. That is what happened to José Arcadio Buendía and the great scientific minds etched in history undergo the same in Benjamin Labatut’s novel. These characters survive toils that are reminiscent of Lovecraftian insanity and otherworldliness.

Immense physical and mental suffering is concomitant to significant scientific breakthroughs. Fritz Haber saved countless lives with his nitrogen fertilizer, while also being responsible for thousands of deaths in the First World War of chemical weapons. Schwarzschild unearths the mystery of black holes while being in the veritable black hole of war himself. Alexander Grothendieck, a most revered mathematician, shuns the discipline after treading through its deepest mysteries and opts for the life of a recluse. The geniuses of quantum science have their minds and bodies racked by their discoveries. The impact of their accomplishment leaves their minds as confused as the world itself, unable to retreat into the former state.

Fictionalized Facts and Factual Fiction

In his narration of the “death wish [that] took hold of the upper echelons of the Nazi party” (p. 11) near the end of the Second World War, Labatut mentions Erwin Rommel in the enumeration of names taking their own lives. For readers who are unaware that Erwin Rommel actually committed suicide on October 14, 1944, more than six months before the Führer shot himself in the head, and not because of the utter defeat the Wehrmacht faced but because he was involved in a conspiracy against Hitler’s life, this little detail serves only to strengthen the impression of the
veracity of Labatut’s narrative. This is a jab at the unreliability of ‘objective’ history, it being so amenable to the whims of those writing it.

Explaining the nomenclature of the color Prussian Blue, Labatut writes that Johann Jacob Diesbach, the discoverer of the color, named it to show the connection between his discovery and “the empire that would surpass the glory of the ancients” (p. 15). Labatut adds that “it would have taken a much more gifted man—one endowed, perhaps, with the curse of foresight—even to conceive of its future fall” (pp. 15-16). The Prussian Empire stands for the veritable empire that science has become, an empire larger than the British Empire could ever be. Sure enough, this prediction is all the more eerie because of the global pandemic, shattering the idols of science in one fell swoop.

Karl Schwarzschild, “astronomer, physicist, mathematician and lieutenant in the German army” (p. 37), sought the secrets of the universe in astronomy. A Jew born in Germany in the later nineteenth century, he was a precocious astronomer, building his own telescope at the age of seven from his father’s glasses and a rolled-up newspaper, along with making his presence known in the field of research by publishing his first astronomy paper at sixteen. Schwarzschild found the precise solutions to Einstein’s complex equations “among mortar explosions and clouds of poison gas” (p. 38). This is a microcosm on Labatut’s part; the absence of mortars and poison gas in the creative agonies of Heisenberg and Schrödinger is overshadowed by the tortures of the mind they endure. Labatut seems to say that great scientific discoveries seem to take birth in violence.

Schwarzschild solved Einstein’s equation by imagining the perfect star and how it would alter matter and space around it, just “the way a cannonball placed on a bed would deform the mattress” (p. 38). The sheer incongruity of the comparison is comic, telling us that even the greatest of minds cannot transcend their mundane reality and their surroundings. Their greatness lies in their simplicity, contrary to what dominant discourses have us believe. Fact gives way to fiction and imagination when Schwarzschild’s singularity spreads “across his mind like a stain, superimposed over the hellscape of the trenches” (p. 40). He sees it “in the eyes of the dead horses buried in the muck, in the bullet wounds of his fellow soldiers, in the shadowy lenses of their hideous gas masks” (p. 40).

Labatut says Schwarzschild voluntarily enlisted in the Prussian military because “like thousands of other Jews, he was anxious to show his patriotism” (p. 42). The extent of his patriotism went beyond military service. According to Labatut, Schwarzschild believed that Germany could ascend to the same height of civilization as ancient Greece and “only a vision of the whole, like that of a saint, a madman or a mystic, will permit us [Germans] to decipher the true organizing principles of the universe” (p. 43).
In Labatut’s narration of Schwarzschild’s childhood and the antics he had while growing up, we cannot distinguish between fact and fiction, between actual history and the figments of Labatut’s wealth of imagination. Labatut effectively employs his prose to expose the shaky foundations of historical narrative and discourse, his words rendering his readers unable to tear their eyes away from the page, the ring of truth around his words rupturing the boundary between the real and the imagined.

Science: A Satanic Symphony

Schwarzschild’s singularity is symbolic of the lines human civilization continues to cross, scientifically and socially. For Schwarzschild, the true horror of his singularity was that it was unknowable. Our minds cannot grasp it “because at the singularity the laws of general relativity simply broke down. Physics no longer had any meaning” (p. 55). As we dig deeper, we find ourselves unable to return, faced with a horror that our minds cannot fathom and what we cannot look away from, the pit is so gaping.

These minds stare into that pit with unblinking eyes, their obsession with these secrets rendering them unable to tear their eyes away, to the point of endangering lives, their own and others’. Schwarzschild damages one of his eyes while watching a solar eclipse. When his friends show concern, he replies that he “sacrificed one eye to be able to see further with the other” (p. 45). During a climbing expedition in the Alps, he has his guides loosen the ropes so that “he could get closer to two of his colleagues and solve a problem that they had been working on together, by scraping equations into the permafrost with their pickaxes” (p. 45).

Shinichi Mochizuki makes himself “delirious at midnight after days without sleep or food. Exhausted and dehydrated, he babbled incoherently, his pupils as wide as an owl’s” (p. 66) while reading the voluminous work of Alexander Grothendieck. Abnegating human interaction, these men prefer to work in isolation, the only people understanding them belonging to the same field as them, able to speak their language. After turning forty, Grothendieck “left his house, his family and his friends, and lived like a monk” (p. 186). Their “social phobia” (p. 64) segregates them from everyday human interaction. This fact serves to make Labatut’s narration of these individuals’ predicament and the veracity of his writing more questionable, but no less probable.

Concerning Heisenberg, we know that in order to escape “the microscopic particles that were torturing him” (p. 94), he traveled to Helgoland in 1925. While there, he acquired his understanding of the behavior of elementary particles, discovering a way to describe the location of an electron and its interaction with other particles. But did his illness induce nightmares in which he saw “dervishes spinning
in the center of his room” (p. 103), the Sufi mystic Hafez also appearing “on all fours, drunk and naked, barking at them like a dog” (p. 103-104)? Did Heisenberg really accept and drank from a wineglass containing the Persian poet’s own blood, watched him masturbate with slit wrists before Goethe performed oral sex on his corpse (p. 105)? As readers, we can understand that this is Labatut’s imagination, but the gothic force of his prose obscures the boundary, wrapping fiction in the gown of fact.

“How could he have created something that not even he himself could understand?” (p. 132) is what Schrödinger seems to ask of himself while spending time in a sanatorium recovering from tuberculosis. Regarding his stay at the sanatorium, the stay is the only fact about Labatut’s narration. Schrödinger’s infatuation with Miss Herwig, the teenage daughter of the doctor who runs the institution is as unlikely as Goethe fellating Hafez. Being a TB patient herself, she finds the means to distract herself in experimenting with a species of aphid that gestates while still in utero. “Three generations were nestled one inside the other” (p. 133). The mention of aphids is not without reason. Miss Herwig exposes the aphids to “a pesticide that stained the glass such a striking shade of blue it seemed as though she were looking at the primordial color of the sky” (p. 134). The stories themselves are like the three generation of aphids, nestled inside one another, the points of contact between reality and fiction too obscure to fully determine.

Heisenberg posited that intrinsic properties are absent in quantum objects; an electron does not occupy a fixed location until it is measured. In Labatut’s telling, Heisenberg reflects: “What was beyond our grasp was neither the future nor the past, but the present itself. Not even the state of one miserable particle could be perfectly apprehended […] if we cannot know, at the same time, such basic things as where an electron is and how it moves, we also cannot predict the exact path it will follow between two points, only its multiple possible paths” (pp. 161-162).

If we cannot determine the path of something as small as an electron, what can we say about our future? We cannot even grasp our past or the present. If there cannot be clarity in the position of a particle unable to be seen with the naked eye, how can we claim to have grasped history or fiction? All we are certain about the past, the present, and the future is the multiple possible realities about them. Schrödinger having sexual attraction for a teenage girl, Schwarzschild being haunted by his singularity can just be as much a part of history as their scientific contributions that rocked the world.

In the second section of the final chapter, the Narrator meets the Night Gardener, the character the chapter is named after. The gardener relates the tale of the giant oak tree in his yard, which had been “a healthy tree, strong and vigorous” (p. 176), but now, some six decades later, it is “ridden with parasites” and “rotting from the inside.” He knows that he is going to have to get it removed, as it threatens
to crush his house under its gargantuan bulk if it falls. Still, he cannot bring himself to do the deed, as it is a relic of the past, one of the few remaining specimens of a “dark, foreboding and beautiful” forest.

The tree is “rotten, yet still alive and growing” (p. 177). Having reached the end of the novel, the tree seems to stand for science, a mighty tree that has stood the test of time long enough and will collapse sooner or later, falling on the house of the person caring for it. It is still standing only because of the memories attached to it. Other than that, it serves no purpose at all. It is a potential hazard, like a storm looming on the horizon. The gardener says, “it’s going to have to come down, sooner rather than later” (p. 177), echoing the words of Schwarzschild, “We have reached the highest point of civilization. All that is left for us is to decay and fall” (p. 53).

The tree’s past is not free from tragedy. The gardener’s grandmother hung herself from one of its trunks. When his father tried to chop it off after removing his grandmother’s hanging corpse, his grandfather stopped him, saying, “she had loved that tree [...] She had seen it grow, tended and nurtured it, pruned and watered it” (p. 177). That same tree supplied the means to her death. Now, her grandson is caring for it. The symbolic significance is unmistakable. The tree, magnificent, mighty, majestic, has proven murderous towards those tending to it, not unlike science. The night gardener chose to abandon mathematics because of the sudden realization that it was “mathematics - not nuclear weapons, computers, biological warfare or our climate Armageddon - which was changing our world to the point where, in a couple of decades at most, we would simply not be able to grasp what being human really meant” (pp. 186-187).

Conclusion

Labatut’s craftiness with which he mingles and obscures fact and fiction within each other is telling. If passing fiction as fact is this easy, how are we to delineate between reality and make-believe? In the present age when information is power, Labatut shows that manipulating information to which human minds subscribe is easier done than said. What chaos will be wrought if millions of human minds “compressed into the same psychic space—unleash something comparable to the singularity” as Schwarzschild dreaded (p. 56)? What will be the consequences? Even scientific fact, which Labatut uses as his orchestra to deliver a performance of Beethoven meets Lovecraft, is not immune to denial.

In the ending lines, the narrator inquires the night gardener about the remaining lifespan of the citrus tree in his own garden. The gardener tells him that the only way to find that out would be “cutting it down and looking inside its trunk” (p. 188). Labatut ends the novel with the question, “who would want to do that?” The sheer irony of the question is not lost on the reader. In order to calculate the
remaining lifespan of the tree, it has to be cut down, thus nullifying the very purpose of the action. The remaining life of the tree ceases at the moment it is cut down to find out how long it has left to live. The only way to find the answer defeats the point of having the answer. Throughout the novel, men of science have unraveled mysteries of the world and the fabric of the world as it was known with it. There is no telling where the scientific process will lead. In the quest to discover the secrets of the world/humanity, scientists may end up neutralizing the purpose and the subject of the answer.

Of Mochizuki’s work, Labatut writes that “a theoretician from the University of Wisconsin–Madison said that he felt as though he was studying a paper from the future” (p. 62) meaning that what is hidden today “for the good of all of us” (p. 65) will be revealed sooner or later. The revelation may prove to be the chopper’s axe for a tree. Mankind can only cogitate about the same questions as Grothendieck: “What new horrors would spring forth from the total comprehension that he sought? What would mankind do if it could reach the heart of the heart?” (p. 75). The answer is made of the same stuff as imagination and nightmares.
References

Banville, J. (2020, September 10). When we cease to understand the world by Benjamín Labatut review – the dark side of science. The Guardian.

Franklin, R. (2021, September 21). A cautionary tale about science raises uncomfortable questions about fiction. The New Yorker.

Hutcheon, L. (1988). A poetics of postmodernism: History, theory, fiction. Routledge.

Labatut, B. (2020). When we cease to understand the world. (A. N. West, Trans.). Pushkin Press.

Laity, P. & Justine, J. (2020, September 3). Biggest books of autumn 2020: What to read in a very busy year. The Guardian.

Marquez, G.G. (2014). One hundred years of solitude. (G. Rabassa, Trans.). Viking.

Pullman, P. (2020, November 11). Books of the year. The New Statesman.

Sacks, S. (2021, September 24). Fiction: ‘Bewilderment’ and ‘When We Cease to Understand the World’. The Wall Street Journal.

Taylor, C. (2020, August 15). Translated fiction: Andrés Barba explores the pitiless nature of belonging. The Irish Times.

Williams, J. (2021, October 22). One factory and the bigger story it tells. The New York Times Review Podcast.