

The Architecture of The Mind: Quantifying Grief and The Science of Suffering in *Transcendent Kingdom* Through the Lens of Algorithmic Trauma

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Abstract—This article proposes the concept of Algorithmic Trauma, exploring how modern literary characters express and try to cope with mental health narratives through the jargon of science, digital information and neurocognition. This paper applies the concept to Yaa Gyasi's *Transcendent Kingdom* (2020), particularly the protagonist, Gifty, a Ghanaian-American Ph.D. candidate in neuroscience that researches reward seeking behavior and relapse in mice. Gifty's laboratory work is uncovered not as something she just happens to do for a career, but as a complex, scientifically cast coping mechanism to her family's devastation: her brother Nana's fatal opioid addiction and her mother's chronic, debilitating depression.

Gifty tries to "algorithmically" process this chaos, looking for a neurological master-code to explain and neutralise the trauma that defied the traditional language of her Evangelical Christian upbringing. She converts the messiness of human suffering into quantifiable measurement data points, graphs and the controlled variables of her mouse models. This neurocognitive language offers a strong first line of defence so she can compartmentalise and de-personalise the emotional burden of her history by looking at it through the detached, objective lens of brain chemistry (dopamine, basal ganglia, compulsivity).

However, the novel ends up exploring the insufficiency of this purely algorithmic approach. Gifty's carefully built-up scientific framework cannot explain the full range of her mother's spiritual agony, the system-wide pressures that contributed to her brother's addiction, or her own long-standing spiritual and emotional conflicts. The argument in the article is that it is not until Gifty recognises the limitations of neurocognitive language and incorporates the "softer" languages of memory, faith, and subjective human connection that she attains healing. By examining Gifty's narrative arc, this paper shows the strength and at the same time the ultimate

fragility of finding digital and scientific answers to immense human pain, unearthing Algorithmic Trauma as a defining characteristic of the modern literary portrayal of mental health.

Index Terms—Algorithmic Trauma, Neuro-cognitive Narratives, Scientific Subjectivity, Narrative Medicine.

I. INTRODUCTION

Literature has been used throughout history to serve as a mirror to the human race and help create a space to interrogate the complexities of suffering, memory, and identity. In a modern society, however, the perspective from which human existence is viewed has changed tremendously towards the empirical and the quantifiable. As society, in its entirety, has become increasingly reliant on data to explain behaviour, the field of literary studies has had to adapt and there are now new intersections between trauma studies and the medical humanities. Trauma, which was once approached with a psychoanalytical or spiritual orientation, is now commonly a battle of narrative interpretation versus biological determinism.

It is from this contest that the idea of "Algorithmic Trauma" comes. The term represents the modern desire, a need to process the wounding of the psychological being through the logic of computation and biology. It is to "debug" the psyche by reducing the pathology of suffering to stimulating the neural circuitry and chemical imbalances (neurochemicals) of the biological organism. This approach is of a modern grief-coping mechanism whereby the chaos of grief is guided through the imposition of the old, binary order of the scientific method.

Yaa Gyasi's *Transcendent Kingdom* (2020) is a seminal text which is used to analyse this phenomenon. The novel is about Gifty, a neuroscience PhD candidate at Stanford who studies reward-seeking behaviour in mice in order to understand the opioid addiction. It is the same addiction that killed her brother, Nana, and the debilitating depression due to Nana's death that plagues her mother. Gifty is the modern rationalist par excellence; she wants to plot the geography of the soul on the topography of the brain. As she goes deeper into the hard science of suffering, she discovers that the raw, messy reality of her family's trauma defies quantification.

This paper examines the tension between Gifty's scientific approach and intangibility of her grief. The objectives of this study are threefold: on the one hand, to define and explore the concept of "Algorithmic Trauma" as a mechanism of defence against overwhelming emotional pain; on the other hand, it is identifiable Gifty's internal conflict through the theoretical lenses of Nikolas Rose "somatic individual", Cathy Caruth "unclaimed experience" and Rita Charon "narrative medicine". Lastly, to show how the novel establishes a synthesis of science explaining the mechanism of the trauma, but it must be narrated and believed in order to survive it.

Plot of the Source:

Transcendent Kingdom is an intensely introspective novel that cuts back and forth between two different timelines: the protagonist's life now as a doctoral candidate at Stanford University School of Medicine, and her life in the past growing up in Huntsville, Alabama. Gifty, the daughter of Ghanaian immigrants, lives a life divided by two great forces: the evangelical Christianity that she practiced as a child, and the rigorous neuroscience of her adult life. The story is driven by two defining tragedies. The first being the death of her older brother, Nana, a gifted athlete who dies from a heroin overdose after being prescribed OxyContin. The second is the resultant "living death" of her mother who collapses into a catatonic depression so severe that it becomes a haunting presence in Gifty's life. In the present timeline, Gifty brings her mother to live with her in California while she does experiments on mice in which she manipulates their neural pathways to

determine if she can inhibit reward-seeking behaviours. The laboratory becomes the stage upon which Gifty tries to solve the equation of their family's suffering Gifty.

Several important themes emerge that are important to this analysis. Foremost is the Tension between Faith and Science. Gifty is always trying to make peace between the "saved soul" of her church upbringing and the "biological brain" of her research. A second important theme is Structural Neglect and Isolation. The novel is a subtle critique of the architecture of abandonment that surrounds immigrant families in the American South - the racial invisibility and economic instability which give fertile ground for addiction and unattended mental illness. Finally, the theme of Control vs. Chaos is very prominent in the text. Gifty's scientific work is rendered not as a career, but as a desperate thematic attempt to impose order to the chaos of grief that is now using the "hard" data of the lab to bandage the "soft" wounds of the heart.

II. THE CONCEPT OF ALGORITHMIC TRAUMA

The idea of Algorithmic Trauma is embedded in a cultural paradigm shift that considers the human brain functionally as a machine - a complex computer made of meat, dominated by inputs, outputs and chemical coding. In this worldview, trauma is not a spiritual wound or a disruption in the story, but a "bug" or a circuit error. It is a material failure of the hardware which can, theoretically, be corrected if one can simply determine the bad line of code or bad firing neuron. This cultural urge to quantify aims to rob suffering of its mystery, to make it manageable, predictable and curable.

In *Transcendent Kingdom*, Gifty takes to such language not just as a profession, but a psychological fortress. "Algorithmic Trauma" becomes her main defence mechanism against the mess that had taken over her family. Her brother's addiction was a storm of irrationality that destroys the family unit; her mother's depression is a silent void that cannot be filled by Gifty. By making dopamine regulation and optogenetics the issue at hand, Gifty tries to remove herself from the "why" and focus all her attention on the "how".

If the trauma is reduced to an algorithm, it changes to a phenomenon which is no longer personal. It crosses into a biological problem, as it has become, instead of being a failure of love or faith. For Gifty, who is plagued by the loss of her childhood religious certainty, the laboratory provides a new liturgy. The “algorithm” has promises: If she can control the variables, if she can get the mouse to press the lever or prevent the mouse from pressing the lever, she can retroactively save her brother’s addiction, thereby curing her mother. She tries to normalize grief, seeking out a universal formula for grief that smoothes away the specific jagged edges of her history. However, this reliance on Algorithmic Trauma creates a dissonance. By reducing the grief, her family is suffering to the value of data. She runs the risk of disrobing the very humanity she is trying to save by reducing her loved ones to case studies rather than people to be mourned over.

III. METHODOLOGY

This paper will follow a qualitative, interdisciplinary approach by placing it at the crossroads of literary criticism and medical humanities with critical data studies. To conduct the analysis of *Transcendent Kingdom* written by Yaa Gyasi, the research will be performed in three stages of the interpretive process:

Close Textual Analysis

A close reading of the novel is the major method of inquiry. This determines particular patterns of narration like the repetition of motifs of laboratory mice, neurochemical mapping, clinical data, to track how suffering on the body is converted into a biomedical and algorithmic rationality.

Theoretical Application

The conceptual framework applied in the study to unfold the text is tripartite:

Somatic Mapping: The application of the concept of somatic individual to analyse the efforts of the main character to comprehend the addiction and depression in purely biological terms.

Structural Trauma: The theory of trauma by Cathy Caruth is used to explain the non-linear structure of

the novel and the unclaimed experiences, which cannot be scientifically measured.

Narrative Restitution: An ethical counter-weight to clinical research through the narration by the protagonist of her personal journaling is analysed using the model of narrative medicine as developed by Rita Charon.

Synthesis: Theorising Algorithmic Trauma

Lastly, the paper combines these observations to establish the definition of algorithmic trauma. This part of the methodology shifts the particular example of the novel to a more conceptual picture regarding how modern suffering is mediated, measured, and diminished by computation and biomedical theories and approaches.

The methodology attempts to address the difficulty of matching the reductive accuracy of the information to the irreducible complexity of lived experience by superimposing clinical observation with personal testimony.

IV. THEORETICAL BACKGROUND

Drawing from the fields of sociology, studies of trauma and medical humanities, this paper draws on each of three foundational theorists to unpack the dynamics of Algorithmic Trauma in Gyasi’s text.

4.1. Core theory: The “Somatic Individual”

The chief theoretical backbone for this analysis emerges out of Nikolas Rose, particularly his work “*The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*” (2007). Rose argues that human beings in today’s times have become “somatic individuals”. We are no longer marking ourselves primarily by interiority, soul or character, but our corporeality. We are our bodies; we are our Neurochemistry. Sadness here is mapped over against serotonin depletion, identity inextricably linked with genetic codes. This “molecularization” of life ways is to say that we seek from biomedicine not so much a cure but a self-definition. Gifty is the epitome of the somatic person; she attempts to molecularize her brother’s tragedy in an effort to relieve herself of the guilt. If addiction were solely a biological imperative, then it could not be a sin, and she would not have to feel spiritual failure.

4.2. Supporting Theories:

4.2.1. Trauma and Unclaimed Experience

Against Rose's somaticism, the counter-narrative is given by Cathy Caruth, in particular her seminal text "Unclaimed Experience: Trauma, Narrative, and History" (1996). According to Caruth, trauma is characterised above all by its "belatedness". It is an event which at the time of occurrence is not fully experienced, rather, it is "unclaimed" and therefore returns later in intrusive flashbacks, nightmares, and repetitive behaviours. Caruth says that trauma is, by definition, resistant to simple narrative or explanation - it is an understanding gap. In the terms of this paper, Caruth's theory identifies the failure of Gifty's science. Despite Gifty's attempt to tame trauma into an algorithm or into a petri dish, the experience of the trauma of her mother's depression remains "unclaimed" by science and persists as a ghostly presence that refuses the logic of the laboratory.

4.2.2. Narrative Medicine

Finally, in terms of resolution for Gifty, Rita Charon's "Narrative Medicine: Honoring the Stories of Illness" (2006) is a frame of resolution. According to Charon, the "medical gaze", charts, scans and numbers, are not enough to heal. She proposes narrative competence as a condition for proper care: the capacity to recognise, receive, interpret and act upon stories that others tell. Charon believes that patients are not their symptoms only but they are the writers of complicated lives. This theory brings some kind of light to Gifty's path from using a strictly medical/scientific approach to a realisation that she must stop treating her mother as a clinical subject and begin to see her as a human being with a story.

V. LITERARY ANALYSIS AND DISCUSSION:

UNPACKING GIFTY'S PSYCHE

Applying these theoretical frameworks to *Transcendent Kingdom* reveals the shortcomings of strictly materialist worldliness through one's intense sense of loss.

5.1. Rose's "Somatic Individual" and Algorithmic Trauma

Gifty's reliance on "Algorithmic Trauma" is a direct result of Rose's "somatic individual". Throughout the novel, Gifty tries to make her brother into a somatic

subject, an array of cells and receptors, rather than a brother to be mourned. She projects her grief on the mice in her lab, creating a molecularization of the history of her own family. When she pesters the neural pathways of a mouse in order to keep it from seeking out a reward, she is metaphorically performing surgery on her brother's addiction. This yields a "safe distance". If Nana was only a biological machine which broke down, the tragedy is technical, not an existential one. It exonerates the family from the "sin" that has been inflicted on addiction within their religious community. Gifty invokes the somatic definition of life to set up a partition against the raw pain of loss, and prefers the cold comfort of the microscope to the heat of grief.

5.2.1. Caruth's "Unclaimed Experience" and the Failure of the Algorithm

In this novel, it is clear how the "Algorithm" is in the end an attempt to square circle Caruth's "Unclaimed Experience" - a task self-doomed to failure. Caruth mentions that trauma is repetitive and cannot be integrated. This can be witnessed in Gifty's mother: her depression is a ghostly, static condition, which refuses to react to Gifty's scientific logic. The mother stays in bed ghost-like representing the "unclaimed" nature of the family's suffering. No matter how much data Gifty collects, the trauma comes back, not hidden and unhealed. The scientific narrative is not able to "claim" the experience of mom's grief because mom's grief is not just a chemical imbalance - it is also a history of displacement, racism, and loss. When the science fails to save her mother, it confirms Caruth: The essence of trauma is not reducible to analysis and the past is not altered merely by the manipulation of biology.

5.2.2. Charon's "Narrative" and Changing the Perspective

This conflict itself is worked through through the lens of Rita Charon's "Narrative Medicine". The climax in the book is not a scientific discovery but a relationship discovery. The "Algorithmic" language breaks down as Gifty comes to realise that her mother is not a problem to be solved but a person to be heard. Gifty starts the reconciliation process with the stories of her childhood, her faith, and her family's journey from Ghana to Alabama. She moves towards "Narrative Competence", realising that while science

can explain the mechanism of the addiction, it cannot explain the meaning of the life lost. By reading her old journals and sitting down in the silence with her mother, Gifty brings together the “data” and the “story”, finding an unsteady peace which the laboratory can never provide.

VI. FINDINGS

The analysis of *Transcendent Kingdom* in these theoretical moulds provides several important findings:

- **The Illusion of Control:** The proxies for Gifty’s failure to control the fate of her family are the laboratory experiments carried out by Gifty. The strict control of the variables in the lab emphasises the chaos and uncontrollability of trauma in the real world.
- **The Failure of Binary Logic:** The scientific method is based on hypothesis and result, true and false. The research concludes that this binary logic is unable to process the non-binary nature of her mother’s depression, which is simultaneously biological, spiritual and systemic.
- **Synthesis over Rejection:** What is so crucial about the novel is that it rejects not the science (the fact) but the faith. Instead, it rejects the importance of science as a source of all truth. Gifty finds peace, not by giving up neuroscience, but by settling for a synthesis: science is the description of the mechanism (how do we suffer), and narrative and faith are the description of the meaning (why do we survive).

VII. SCOPE FOR FURTHER RESEARCH

- **Intersection with Digital Humanities:** Future research could further the idea of “Algorithmic Trauma” to explore the way mental health crises are currently (and potentially in the future) being predicted through AI and digital data tracking as that sense of individuality and nuance is potentially erased.
- **Post-Colonial Somaticism:** A study could be made on how the “Somatic Individual” concept applies specifically to immigrant bodies in analysing how structural neglect and racism are often misdiagnosed as biological failings purely in the medical literature.

- **Comparative Medical Narratives:** A comparative analysis could be undertaken between *Transcendent Kingdom* and other contemporary “lab-lit” or medical memoirs to see if the change away from somaticism to narrative is a consistent trend in modern trauma literature.

VIII. CONCLUSION

This paper has crossed the terrain of “Algorithmic Trauma” in Yaa Gyasi’s *Transcendent Kingdom*, tracing over the terrain of tensions between biological imperative and human narrative. However, by using the idea of the “Somatic Individual” by Nikolas Rose, it is evident that Gifty is first trying to molecularize her grief - to use the certainty of science to protect her from the ambiguity of loss. However, through the care of Cathy Caruth, the paper shifts to the inevitable failure of this approach; the “unclaimed experience” of trauma proves too ghostly and complex to be captured by a neural map.

Ultimately, the text makes a case for the need for Rita Charon’s “Narrative Competence”. The study confirms that as much as the body is a biological machine, the self is a story that needs to be told. Gifty’s journey from the isolation of the microscope to the vulnerability of the confessional shows that healing is not an act of debugging, but an act of witnessing.

In a world becoming more dependent on data, *Transcendent Kingdom* is an important reminder. It implies that while we must make use of the tools of the twenty-first century available to understand the “somatic” self, we must not lose the ancient tools of narrative and faith. The algorithm is able to follow the path of a neuron, but only the story is able to follow the path of the soul. The synthesis of these two worlds is not as a contradiction but as the only way to the truly transcendent understanding of the resilience of humankind.

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