

An abstract painting with a textured, impasto style. The composition features bold, geometric shapes in a palette of deep reds, oranges, yellows, blues, and greys. A large, dark, curved shape dominates the left side, while a bright, curved shape is on the right. The bottom features sharp, angular forms in red, white, and blue. The overall effect is dynamic and layered.

# THE DREW REVIEW

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## Artist Statement

I began painting interiors from memory to first commemorate my grandparent's house after they passed away and their home had been sold. Since then, the vocabulary of the pieces has evolved and what I draw comes mainly from imagination.

The most recent pieces depict settings overrun by intrusive yet polite forms. The paintings are made using oil pastels, soft pastels, and oil paint. The works feature stylized rooms, landscapes, and locations with an abstracted sense of light and time, investigating the innate comfort of familiar form when the present moment is unrecognizable. Each painting has a unique palette built around neutral browns and greys with various tones of blue, green, purple, pink, and yellow that emphasize the architectural planes in the piece. The creation of the work is cyclical, and small elements from a series of paintings or drawings are redrawn, distorted, or reconfigured and used as the groundwork for the next series. This process mimics how memory works to remember and re-catalogue passed events to meet our current needs. Windows -- their value both as a strong shape and as a visual metaphor for insight -- are found in many of the works. Instead of a literal figure, light is the guide that brings a sense of human presence through the frame of the paintings into the spaces. Although I haven't been inside many of the places I've painted in a long time, bits and pieces from the blueprints of my grandparents' home continue to crop up, as I suspect they will for some time in my work.

Evelyn Grace Viveiros

*CLA 2021*

# The Drew Review

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# Foreword

*The Drew Review*, Drew University's annual research journal for the undergraduates of the College of Liberal Arts (CLA), publishes undergraduate student research from the previous calendar year.

This year, we recieved a total of thirty-four submissions and have published eight. Those interested in submitting their work in the future will require a faculty nomination, which must include the author's name and paper title. Alongside the paper, this nomination must be emailed to [drewreview@drew.edu](mailto:drewreview@drew.edu), with the author CC'ed on the email.

As we are a double-blind, peer-reviewed journal, all submissions must be emailed without any identifiable information, such as the student's name or the name of the professor for whom the paper was originally written. All images will be published in black and white, and it is the author's responsibility to ensure that the images are permissible for reproduction under copyright law. All students who submit should expect requests for revisions prior to the board's final decisions for publication.

As always, we are beyond grateful for our faculty advisors, Dr. G. Scott Morgan of the Psychology Department and Dr. Jens Lloyd of the English Department. Their help and support is what ensures *The Drew Review's* success each year.



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Haunting the Pages and the Screen: Translating  
the Gothic in Shirley Jackson's *The Haunting of Hill  
House* to the Netflix Adaptation  
*Kelly Notine*

**Abstract**

This paper traces the transformation of Shirley Jackson's *The Haunting of Hill House* (1959) into a 2018 Netflix series of the same name, and seeks to explore how the key Gothic tropes that make up Jackson's original text—namely psychological fragmentation, transgression of boundaries, and haunted houses—maintain their significance in a screen adaptation that subverts the text's original plot.



In her critically acclaimed Gothic horror novel, *The Haunting of Hill House*, Shirley Jackson envisions a narrative that, on the surface, appears to be a classic haunted house tale, but in reality is a commentary on patriarchal structures, psychological trauma, and motherhood. The novel centers around Eleanor, a young woman who, after the death of her overbearing mother, spends the summer as part of a paranormal investigation with three others—Luke, Theodora, and Dr. Montague—at the infamous Hill House. When Netflix adapted the novel into a series in 2018, Jackson’s novel took on a somewhat unrecognizable look, as writers drastically changed the novel’s plot and major characters. Rather than taking part in a summer excursion in a ‘haunted’ house, Eleanor (called ‘Nell’ in the Netflix adaptation) is the youngest daughter of the Crains, a young family of seven who live in Hill House while father Hugh and mother Olivia renovate the house for resale. The series tracks not only Nell’s decline from the trauma endured in Hill House, but the ways in which her demise mirrors that of her mother many years earlier, and how the remaining Crain siblings must reconvene to make sense of the events at Hill House. Despite the reconstruction of the group that inhabits Hill House, the infectious terror that plagues Nell, and is further projected onto Olivia, remains as important in the adaptation as in Jackson’s original novel. More broadly, although widespread changes were made to the characters and plot line of Netflix’s *The Haunting of Hill House*, the unmistakably Gothic elements of Jackson’s original text, ripe with familial trauma and excessive emotions, retain their significance while being presented in a novel narrative. I intend to first explore what the Gothic refers to in the context of Jackson’s story, notably the fragmentation of self, excess and transgression of boundaries, and the use of architecture and landscape to actively construct conflict. Next, I will trace how the violation of boundaries between mother and daughter lay the groundwork for trauma in Jackson’s novel, exposing the self to the vulnerable environment of Hill House,

and how, despite its shift in characters and plot, the Netflix adaptation still captures this dynamic. Finally, I will look at the landscape of Hill House itself, both in the novel and the series, pointing to common Gothic tropes to establish how its construction only furthers the psychological damage its inhabitants face.

Within Gothic literature, a common trope is the protagonist's descent into a sort of fragmented self, a disturbed version of themselves that, due to trauma and/or conflict, becomes almost a separate entity. Robert Miles goes on to discuss how the fragmentation of self presents itself in literature:

[T]he Gothic has found itself embroiled within a larger, theoretically complex project: the history of the subject...the figure of neurosis. *Compulsive, repetitive, superficially meaningless behavior* somehow addresses a deeper 'wound', a rift in the psyche...the Gothic is a discursive site, a 'carnavalesque' mode for representations of the fragmented subject. (2-4, emphasis added)

Miles' commentary on the fragmented self establishes the Gothic as being a genre fascinated by psychological turmoil and grotesque mental illness, its renowned 'darkness' stemming from this showcasing of human suffering. Furthermore, the notion of the fragmented self suggests isolation, in this sense mental but also potentially physical, and is of equal significance in the Gothic, as feelings of solitude and loneliness are oftentimes the very conflicts that lay the groundwork for self-fragmentation. Equally as significant in *The Haunting of Hill House* is the notion of monstrous maternity which, while not directly borrowed from traditional Gothic, is a prime example of the Gothic's fixation on excess and the blurring of boundaries. Within his larger analysis of Gothic origins, Fred Botting suggests that the genre thrives on the extremes of human nature, "produc[ing] emotional effects on its readers rather than developing a rational or properly cultivated response...[and] transgress[ing] the proper limits of aesthetic as well as social order in the overflow of emotions that [undermine] boundaries of life and fiction" (4).

The Gothic is a genre that highlights the ‘too much’ of human nature, illustrating the ways in which feelings overrule rationality and, in turn, fuel behaviors that are inappropriate or equally excessive. Finally, the role of architecture and the construction of houses being significant to conflict is a staple of the Gothic genre, as it conveys to its protagonists that the literal landscapes which they inhabit are not safe spaces, but instead act as agents of isolation. In their discussion of haunted settings within the Gothic, David Punter and Glennis Byron posit that houses in Gothic literature “distort perception...[and] cause some slip-page between what is natural and what is human-made; they act as unreliable lenses through which to view history and from the other side of which may emerge terrors” (259-60). Gothic landscapes act as not only the backdrop for conflict and trauma, but in some cases, as in *The Haunting of Hill House*, as the source of conflict itself.

First and foremost, the potency of maternal consumption and smothering effects of motherhood originally written into Jackson’s narrative transcend the boundaries of the novel and maintain their importance in the Netflix adaptation. Eleanor’s original decision to embark to Hill House does not necessarily stem from a fixation on the supernatural phenomenon Dr. Montague is studying, but is rather prompted by her mother’s death. A desire for liberation from her mother’s demanding and borderline abusive household drives Eleanor to Hill House as a first act of independence, a means to try and mold herself a new identity separate from the mother; but this very search for freedom is ultimately what leaves her emotionally fragile, a perfect candidate to succumb to Hill House’s influence. In her broader analysis of the dysfunctional families found in Jackson’s works, Roberta Rubenstein argues that, “For Eleanor Vance...the mother’s death precipitates the daughter’s existential homelessness and her literally annihilating experience of being lost” (317), further highlighting that Eleanor’s relationship with her deceased mother has already laid the groundwork of her

demise before even arriving at Hill House. Even once within Hill House, Eleanor is called back to images and memories of her mother on more than one occasion; she awakes one night to hear knocking on the bedroom walls and assumes it to be her mother trying to summon her; she becomes distressed at Theodora's offer to paint her toenails, briefly citing her mother before trailing off. These events hint at an odd, codependent relationship between Eleanor and her mother, with Eleanor simultaneously wanting detachment and closeness to her mother. Lynne Evans expands on the potential root of this peculiar relationship:

Familial incest, including 'love' between 'mothers and daughters,' as George Haggarty notes, is a recurring trope in gothic fiction...Eleanor's internal dialogue indicates not only that something unspeakable lies beneath her words, but also that what is left unsaid is something she does not *want* to tell, even to herself...[she] conflates sexuality and memories of her mother with her own sense of vulnerability. (107-08)

The relationship between Eleanor and her mother has been so interwoven with give-and-take, abuse and desire, that she no longer can sit with the intimacy of even a platonic relationship with friends, thus highlighting how little of her identity is actually her own.

As Eleanor struggles to find emotional connection with the other inhabitants of Hill House, removed from her 'old' life and her mother, eventually losing interest in Luke and spurned by Theodora when asking to return home with her, she is driven away from human interaction and begins to find comfort in the house itself as a companion. Teetering on the verge of insanity, Eleanor dances around the hallways of the house, feeling as though the house is hugging her, proclaiming, "I have broken the spell of Hill House and somehow come inside...I am home, I am home" (Jackson 171). Prior to Hill House, the only 'home' Eleanor has known is the one she shared with her mother. At

once both comfortable and smothering, Hill House begins to fill the void of such a space in Eleanor's life. Eleanor finds comfort in the grandiosity of Hill House and, feeling so small within it, becomes enamored with the idea of living there forever. Thus, Hill House is a surrogate mother for Eleanor, what Lynne Evans refers to as "a maternal power...with a monstrous maternal presence that proves the most difficult challenge to a normative resolution for Eleanor" (106), since it is the lack of identity stemming from her mother that makes her so susceptible to the allure of the house. Additionally, Alexis Shotwell argues that Eleanor is further able to fall into this other mother's grasp because of her rejection from her peers; without the attention of Luke or doting on from Theodora, Eleanor positions the house itself at the center of her world, and slowly becomes more absorbed in it (136).

The Nell of Netflix's *The Haunting of Hill House* is not a reclusive caretaker for her elderly mother, but instead a dynamic character, whose point of view switches between her life as a frightened child within the house and current day adult life, many years removed from her mother's death. In a departure from Jackson's original text, the show does not imply a parasitic, abusive relationship between Nell and Olivia; the two are close, but this closeness stems from the ailments they each face while in the house, this comorbidity being the foundation of their closeness. While Nell is tormented with an apparition she calls the 'Bent Neck Lady,' an actual vision of herself dead by suicide later in life, Olivia experiences frequent migraines and nightmares as her time in the house drags on. Still haunted by what occurred at Hill House years earlier, and without her mother to validate her trauma, Nell enters adulthood with a similar vulnerability to that which the novel's Eleanor enters Hill House with. Tricia Lootens hints at the weakness inherent in Nell's lack of identity in the novel, noting:

Hill House sets out to separate its guests, and it locates Eleanor as the weak link. Although each of the others



has reasons to cherish the illusion of belonging together, Eleanor cannot even pretend to herself that she belongs anywhere else...It [the haunting] (and the desperation it revels in her) separates her from the others even as it seduces her into believing that Hill House, and Hill House alone, wants and needs her. (151)

Though technically referencing the Eleanor of the text, Lootens' observations are relevant and true of Nell as well. The Nell of the series is a twin, and thus intrinsically lacks an identity that is solely her own; her childhood trauma is intertwined with her brother's, and when he leaves for rehab in his adult life, Nell struggles with who she is in his absence, if not defined as 'Luke's twin'. It seems natural, then, that when visions of Hill House ghosts from her past life begin to terrorize her again, Nell returns to Hill House, the site of her mother's demise, to seek out this maternal comfort and return home to end her life.

However, Nell's trauma in Hill House is not solely her own, but is shared with Olivia as well. The house is not only the backdrop of but also the cause of Olivia's descent into madness. Troubled by her own delusions of ghostly apparitions, Olivia also assumes the terror her children (Nell in particular) face in the house. Her disturbance is rooted in maternity, in the fear that her children are being lost in the house's madness, and her subsequent distress ultimately drives her to insanity. Terrified of her children being destroyed by the house's evil, Olivia becomes a family annihilator and attempts to poison them via Nell's cup of stars. Olivia's murderous tendencies are suggestive of the feeding attempts of a mother Eleanor witnesses at the diner early on in the novel, when a little girl refuses to drink her milk unless it is in her coveted 'cup of stars.' Both instances with the cup of stars highlight this notion of a mother feeding for her child, and thus giving it life; yet, Eleanor's cup of stars exists only in her imagination, emphasizing her desire for a warm maternal figure, and the cup of stars Olivia gives her children is a vessel for their destruction (Rubenstein 318). In

the same way that Eleanor associates this cup of stars with an idealized life, the escape from being “trapped into being like everyone else” (Jackson 15), so does Olivia believe her delivery of the poisoned cup to be an extension of her love for her children.

While maintaining the lack of boundaries that persist in Eleanor and her mother’s relationship in the series, the screen adaptation undercuts the association Jackson makes between monstrous maternity and patriarchal oppression, even going so far as to pose the Crain patriarch as a savior of his children. In yet another departure from Jackson’s plotline, Netflix constructs Hugh Crain as the heroic patriarch integral in saving his children from the delusions of their mother. After husband Hugh ‘steals’ the children from Hill House to save them from Olivia, she runs after them and, caught up in grief, misses a stair, falling from the tall staircase to her death. Her death within the house, her final moments of life spent trying to retrieve her children, solidify Olivia as the ghost that haunts Hill House; Olivia *becomes* the motherly figure and symbol of tragedy that Hill House is. However, it is the broader acknowledgment of destruction from the inside out, of parents being the destructive and consuming force in their children’s lives, that retains its significance in both versions. When Nell, distraught and losing her sanity, returns to Hill House at the end of her life, she is greeted by her mother, welcomed home, and experiences a death “uncannily similar to her mother’s...dress[ing] in her mother’s clothes and fall[ing] from the same spiral staircase” (Laredo 69). She is returned, at last, to the comforting embrace of Hill House, and therefore, her mother’s body. The downfall of the novel’s Eleanor is similarly rooted in maternity, as she is unable to detach herself from the ‘mother’ she has found in Hill House, and when confronted with leaving, steers her car into a tree. Eleanor’s demise, as an extension of her desire to stay home, acts as “a sort of reverse birthing...Eleanor is absorbed into Hill House—or else, at the very least, the promise of a return to such amniotic oneness is the delusion that lures her to her death”

(Pascal 469). Part of the innate horror in the novel's Hill House stems from its original builder Hugh Crain, a tyrant in his family who, Pascal argues, used "his fearmongering rhetoric... as a form of psychological ravishment designed" to manipulate, scare, and lure his daughters into his abusive hands (Pascal 472). Crain's tyranny further invokes the earlier suggestion that what haunts Hill House is maternal consumption, while positing that it is not the empty want of maternal presence that causes disturbance (particularly to Nell), but the domineering patriarchal nature on which the house is built. Overall, the disturbed and dysfunctional family narrative that inhabits the pages of Jackson's original *The Haunting of Hill House* finds its way to the screen in a way that similarly demonstrates the novel's commentary on motherhood, and mothers more broadly, as an oppressive force. It is the already fragmented nature of Eleanor, deposited equally onto Nell and Olivia in the series, coupled with this excessive maternity, that crafts such a rendering of a haunted house haunted only by the people who live within it.

In tandem with the familial conflict and fragmented self outlined above as essential to crafting the horror of Hill House, the Gothic construction of Hill House itself acts almost as a character of its own and is instrumental in the plot of both Jackson's novel and the series adaptation. The original Hill House is a dark structure surrounded by hills, labyrinthine, "a series of enclosed rooms" full of "little oddities" (Jackson 46). The floorplan is complex and difficult to navigate and, when the guests try to prop doors open to remember their way, the same doors they opened shut seemingly by themselves. Upstairs, an uninhabited nursery is guarded by "two grinning heads... captured forever in distorted laughter" that convene at a spot notably colder than the rest of the hallway (Jackson 88). In true Gothic form, a form which emphasizes the settings characters inhabit as malevolent, it is the very architecture of Hill House, confusing and misleading, that acts as a source of discomfort for the group from their first moments there. The isolation that

Hill House orchestrates through its complex floor plan is the true source of horror, as it isolates them, makes each guest more susceptible to delusions, and in Nell's case, to be "swallowed whole by a monster" (Jackson 29). Just as the guests can become physically separated from one another, they can become mentally separated from one another and succumb to the mother house's call.

Similarly complex to that of the novel, the Hill House of the screen is constructed in a manner that is confusing and difficult to navigate, intentionally designed to isolate the family members from one another. Parts of it are in dilapidated condition, and the children wander the house and grounds in search of ways to make the house feel homely. Significantly, Punter and Byron note that Gothic homes are anchored in this lack of 'homeliness', arguing that, "within its walls one may be 'subjected' to a force that is utterly resistant to the individual's attempt to impose his or her own order" (262). Yet, the Netflix series highlights a few locations in particular within the house that, while absent from the original, only serve to further the ways in which its Gothic architecture actively constructs the story's conflict. On the top level of the house is a room which the Crain children refer to as the 'Red Room', given its red door, which, despite their efforts to open with keys and other tools, cannot be opened. The children at times see shadows walk past from the bottom of the doorway, and thus suspect something of living in there secretly. The Red Room is shrouded in mystery until the last episode of the series, in which the deceased Nell reveals to her siblings that the Red Room has always been accessible to the children and has been presenting itself to them as whatever they need most. For the young Luke, it was a treehouse to hide away in; for Olivia, a reading room; for Theo (made Nell's sister in the series), it was a dance studio, and her movements from inside were the very 'shadows' her siblings saw from under the door. The amorphous nature of the Red Room, a room that cannot be traditionally opened with

lock and key, and yet reconstructs itself to fit each inhabitant, is indicative of the same Gothic traits that give Hill House its eeriness in the novel. The Red Room's ability to separate each member of the family without their knowledge demonstrates how deeply the disease of Hill House has permeated each of their minds, making the seemingly familiar unfamiliar and disturbing their assumptions about their time spent in the house.

The Netflix adaptation also builds upon the already rich Gothic nature of Hill House by introducing a basement into the narrative, which acts both as a site of trauma for the young Luke and is the source of an ever growing black mold that Hugh cannot tame. While playing in the dumbwaiter one night, Luke is accidentally sent to the basement floor and, upon crawling out, is attacked by a zombie skeleton of sorts. Fearing his son is traumatized, Hugh checks the basement the next day and discovers nothing, attributing Luke's horror to imaginative monsters. Luke's seemingly inexplicable trauma is significant because it takes place in a particularly isolated part of the house, and even after the fact, he is not believed, invoking suppressed terror that gets swept under the rug because its source is not immediately visible. Later on, while doing demolition in the basement, Hugh discovers a black mold infestation that leads to the discovery of a decayed body within the house's walls. Even after treating the basement with chemicals and removing the body, the mold returns and continues to grow, stemming from an unknown location within the house. Later revealed to be coming from the Red Room, the mold grows as Olivia's mental state deteriorates, until both she and the house are so overcome with this infection that she tries to kill the children. Though the mold's growth is only speculated to be aligned with Olivia's downfall, Dawn Keetley argues that "what is clear...is that, visually, black mold encroaches, especially in the final two episodes and especially as the distinction between 'life and death' becomes increasingly unclear" (112-33), suggesting that the mold is itself a manifestation of Olivia's decline into madness.



The mystery of the basement, as well as the conflict that grows out of its inexplicable events, play a key role in developing the uneasy mood that is consistent throughout the series, which, in the novel, would be conveyed largely through Nell's internal dialogue. These new locations within the house, while not present in the original novel, do lend themselves to crafting a landscape that is ripe with mystery and discomfort and further construct the house itself and its construction as their own antagonists.

All in all, in spite of the dramatic character difference and plot shifts that occur in *The Haunting of Hill House's* translation from book to screen, the Gothic elements of Jackson's text, specifically the familial trauma, fragmentation of self, and use of landscape to create conflict in the narrative remain intact. The disturbance of Eleanor, while partially deposited onto Olivia, still conveys the transgression of maternal boundaries and eventual surrender to a house that mirrors the oppressive grasp of a parent. While the repositioning of Hill House's inhabitants as a family rather than an experimental group of strangers shifts some of the relationships that Jackson initially constructed, the restructuring of the 'family unit' to that of the Crains only serves to further emphasize the downfall of family structure that Hill House represents, cementing the adaptation firmly within Jackson's original Gothic allusions. This reimagining, while a departure from the novel's narrative, suggest that not all is lost in translating a beloved text to a different media; rather, the book's adaptation emphasizes the subtle manner in which thematic necessities and intrinsic horror can be morphed in shape while still maintaining effect.

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# Sonodynamic Microbubble Therapy for Pancreatic Cancer: Properties, Applications, and Outcomes

*Laila Serraj*

## **Abstract**

Pancreatic cancer is one of the most lethal malignancies with a 10-year survival of  $< 1\%$ <sup>14</sup>. Despite many substantial efforts to effectively diagnose and treat this cancer, survival rates have remained relatively unchanged since the 1960s<sup>1</sup>. Pancreatic cancer is usually detected at an advanced stage and most treatments are ineffective<sup>1</sup>. The inherently toxic nature of chemotherapy drugs is essential for them to kill cancer cells. However, the side effects associated with these treatment regimens are detrimental to patients. One strategy to reduce the deleteriousness of these treatments is to limit the exposure of healthy tissue to these drugs by encapsulating them in a vehicle that is injected systemically and released at the tumor site. This approach addresses the issue that current treatments pose since anticancer drugs are distributed throughout the patient's body and doses are limited by the toxicity of these drugs. Sonodynamic microbubble therapy is an emerging field of drug delivery that involves the use of ultrasound to disrupt loaded microbubbles at a target site in a localized manner<sup>14</sup>. This novel technology enables drugs to be delivered across natural barriers, such as tumor cell membranes, thereby increasing cellular uptake<sup>17</sup>. Herein, we will focus on the causes of pancreatic cancer and highlight some of the treatments available to reduce the burden of this disease. Likewise, we will investigate the delivery approaches of sonodynamic microbubble therapy combined with current treatments that deliver anticancer drugs directly to the site of the tumor. The application of sonodynamic microbubble therapy with the combination of the cytotoxic cancer drug, gemcitabine, and a

targeted therapy, erlotinib, is proposed in this paper to increase the survival rate of pancreatic cancer patients. Furthermore, the status and the therapeutic efficacy of this novel technology will be assessed based on recent data obtained from clinical case studies.

## **Introduction:**

Pancreatic cancer remains one of the most dismal medical diagnoses over the last four decades with very few improvements in both screening and treatment<sup>14</sup>. This cancer is characterized by a malignant solid tumor that occurs after a series of abnormal cellular divisions<sup>14</sup>. Pancreatic cancer currently is the third leading cause of cancer deaths with a very disheartening rate of survival of less than 8%<sup>13</sup>. With symptoms that manifest progressively over time and that are usually confused with other diseases, most patients are often not diagnosed until the late stages of the disease. Currently, there are few effective treatments for this cancer. These range from surgical procedures to various drug treatments<sup>13</sup>. However, over 40% of patients are diagnosed with borderline resectable or locally advanced pancreatic cancer usually making these treatments ineffective<sup>14</sup>. Therefore, there is an urgent need for effective methods to eradicate pancreatic cancer tumors.

Recently, researchers have developed a new and emerging technology known as ultrasound targeted microbubble destruction<sup>21</sup>. This novel method permits physicians to fill microscopic bubbles with a variety of compounds such as cytotoxins or small molecules like tyrosine kinase inhibitors<sup>19</sup>. Ultimately, the bubbles serve as a vehicle for compound or even gene delivery. Using ultrasound signals, physicians can deliver the loaded microbubbles directly to the site of the tumor releasing the components of the bubble<sup>21</sup>. Given the fact that this method of treatment is targeted, side effects that are usually associated with chemotherapies are reduced significantly<sup>6</sup>. Microbubbles were originally developed as a model for imaging and screening in other medical fields facilitating the diagnosis of certain disorders and illnesses<sup>19</sup>. This paper aims to highlight the causes, symptoms, and available treatments for pancreatic cancer. Additionally, it will investigate the properties and therapeutic effects of sonodynamic microbubble therapy for pancreatic cancer as well as new emerging fields for application.



## **Overview of Pancreatic Cancer:**

Pancreatic cancer is an often fatal form of cancer that affects a small gland located in the back of the abdomen, deep down in the stomach cavity known as the pancreas. This essential gland is responsible for producing digestive enzymes and secreting blood-sugar regulating hormones: insulin and glucagon<sup>16</sup>. Pancreatic cancer develops, similar to the vast majority of cancers, at a relatively distinct and rapid pace. The cells of the pancreas begin to undergo abnormal and disorderly cellular divisions. As time progresses the cells accumulate and form a mass referred to as a cancerous tumor. The tumor formed is categorized as a solid tumor, meaning that the mass is free of cysts or any liquid areas<sup>13</sup>. If untreated, the cancerous cells of the tumor can invade other regions of the body. Most commonly, the cancer will usually attack other organs of the stomach cavity. The cells target the liver, kidneys, and other surrounding tissue including the lymph nodes<sup>3</sup>.

### *Causes:*

Approximately 90% of all pancreatic cancer cases are sporadic and 10% are hereditary<sup>4</sup>. While the exact causes of pancreatic cancer have yet to be determined, researchers believe that a series of genetic mutations could be the leading causes of the disease<sup>4</sup>. Research shows that there are several frequent genetic components associated with pancreatic cancer<sup>10</sup>. In this paper, we will explore two of the most common pathways associated with this malignant disease: the EGFR and the RAS pathways.

### The EGFR Pathway:

The epidermal growth factor receptor EGFR is also known as HER1, and is a transmembrane glycoprotein that is overexpressed 30-90% in pancreatic cancer<sup>8-10</sup>. EGFR is responsible for regulating cell division, repair, and survival<sup>8-10</sup>. Moreover, it is involved in tumor metastasis and contains a tyrosine

kinase domain<sup>8-10</sup>. When EGFR becomes overexpressed as a result of a mutation, tyrosine kinase inhibitors can be used to regulate and to inhibit intracellular phosphorylation<sup>8-10</sup>.

### The RAS Pathway and the KRAS Gene:

The KRAS gene provides instructions for making a protein called Ras, part of the RAS pathway<sup>13</sup>. Several genomic studies have identified mutations in the proto-oncogene KRAS as key markers associated with pancreatic cancer, occurring in >90% of cases<sup>23</sup>. KRAS is a molecule that serves as a molecular switch to regulate proliferation, differentiation, metabolism, and survival via activation signaling pathways<sup>23</sup>. The mutation of this gene results in cancer cell growth and the rapid proliferation of these cells in the body. Knowing whether a patient has a mutated KRAS gene may help plan cancer treatment and reduce the burden of the disease<sup>23</sup>.

In addition to genetic mutations, research has established that smoking and obesity are key environmental risk factors for pancreatic cancer<sup>1</sup>. Moreover, due to a close correlation between alcoholism and pancreatitis, it has been concluded that alcohol abuse can potentially lead to pancreatic cancer, with an increase in age<sup>10</sup>. Hereditary pancreatic cancer has been linked to a series of diseases like long-standing diabetes, Peutz-Jeghers syndrome, familial atypical multiple mole melanoma (FAM-MM), and familial adenomatous polyposis (FAP)<sup>10</sup>.

### Symptoms:

The symptoms of pancreatic cancer progress gradually over time and include mid epigastric pain that can affect the back, a change in weight, nausea, fatigue, and jaundice which indicates the presence of compression of the bile duct<sup>10</sup>. In certain cases, the spread of the tumor to the stomach can result in gastric obstruction. Since the symptoms of pancreatic cancer are vague, diagnosing cancer promptly is a difficult task. Late

diagnoses often leave no chance for a cure<sup>10</sup>.

### *Treatment Options:*

A variety of treatments are available for those afflicted by cancer ranging from invasive surgical procedures to different drug classes. However, appropriate treatment is determined based on numerous factors including cancer stage, age, and underlying medical conditions.

### *Drug Categories:*

#### Cytotoxic Drugs:

Cytotoxic drugs also known as cytostatic drugs are a class of drugs used to treat a range of cancers<sup>4</sup>. This class of drugs inhibits cell division, destroys cancerous cells, and leads to a decrease in tumor size after circulating in the bloodstream<sup>4</sup>.

#### Immunotherapies:

Immunotherapies, also known as biologic therapy, is a type of cancer treatment that works to boost the body's immune system or restore its function<sup>4</sup>. These types of treatments can include a variety of approaches such as monoclonal antibodies, T-cell therapy, and cancer vaccines<sup>4</sup>. While strengthening the immune system, these approaches can also slow or stop the growth of cancer cells and prevent the spread of cancer to other areas of the body<sup>4</sup>.

#### Targeted Therapies:

Targeted treatments are a class of therapies that target specific cancer genes, proteins, or tissues<sup>4</sup>. These treatments are capable of blocking or turning off certain chemical signals that order cancer cells to replicate and spread<sup>4</sup>. These types of therapies are especially effective given the fact that major side effects associated with cytotoxins are reduced. Small molecule drugs like tyrosine kinase inhibitors inhibit certain cancerous

pathways (Ex: EGFR Pathway) and block functions like migration, metabolism, apoptosis, and survival<sup>8</sup>. While these categories of drugs are the most common in treating various types of cancer, several other mechanisms exist for targeting pancreatic cancer and include sustaining proliferative signaling, deregulating cellular energetics, inducing angiogenesis, activating invasion and metastasis as well as enabling replicative immortality<sup>3</sup>.

### *Surgical Procedures:*

While the previous drug categories above treat cancer with varying effectiveness, certain surgical procedures can reduce tumor burden and likely result in cancer remission. Several surgical procedures are available for those diagnosed with pancreatic cancer, however, only approximately 15% of the tumors that are detected are in a resectable state<sup>2</sup>. Some of these procedures include: removal of the body and tail of the pancreas, using a distal pancreatectomy or Whipple procedure<sup>11</sup>; removal of the entire pancreas, using total pancreatectomy in which the patient will require lifelong insulin and enzyme replacement<sup>11</sup>; and removal of tumors affecting nearby blood vessels, which is the *most common procedure*<sup>11</sup>.

### *Outcomes:*

Despite the existence of various treatments and decades of extensive research, pancreatic cancer is still projected to be the second leading cause of cancer-related mortalities in the United States by 2030<sup>21</sup>. It is estimated that 53,670 individuals will be diagnosed with the disease and that 43,090 individuals will fall victim to this malignancy<sup>21</sup>. The average five-year survival rate is as low as 10% and the median overall survival rate is 11-23 months<sup>21</sup>. These rates show how urgently we need new and effective means of treatment to overcome this deadly cancer.

## Sonodynamic Microbubble Destruction:

### *Brief History of Microbubbles:*

Microbubbles were initially used as contrast agents for ultrasound imaging and were discovered by the researchers Gramiack and Shaw. The use of these microbubbles dates back to as far as the 1960s<sup>15</sup>. Early formulations were highly unstable and very difficult to reproduce<sup>15</sup>. To address the issue of instability, the microbubbles were initially coated in albumin, a plasma protein in a patient's blood<sup>15</sup>. New coatings were developed to improve stability *in vivo*<sup>15</sup>. In recent years, however, research has shown that this technology can serve not only as a diagnostic method but also as a vehicle for drug transportation<sup>18</sup>. The bubbles can transport various drugs directly to the source effectively and in a targeted manner<sup>18</sup>.

### *Microbubble Fabrication Methods:*

There are a variety of methods to fabricate microbubbles. Each method yields a variety of microbubbles that differ by size and consistency<sup>20</sup>. Methods of fabrication and the loading of microbubbles are processes that must be chosen based on the desired application of the technology. Important factors to keep in mind include shell coating, size, dispersion, drug properties, and drug loading capacity<sup>20</sup>. It is crucial to consider the hydrophobicity or hydrophilicity of the desired drug or compound<sup>20</sup>. Very hydrophobic drugs, similar to paclitaxel, can simply be added to the lipid suspension before agitation<sup>20</sup>. However, hydrophilic drugs require an extra step. These sorts of compounds must be directly conjugated to the outer surface of the bubble<sup>20</sup>. Ultimately, the drug molecule must be modified in a way that allows it to be conjugated to a lipid, or attached to the bubble using avidin-biotin coupling<sup>20</sup>. Avidin-biotin coupling is one of the strongest biological interactions between a ligand and protein and is extremely resistant to any denaturing agents<sup>20</sup>. In this paper, we will focus on both agitation and

sonication as methods of fabrication. These methods are most common and yield highly stable microbubbles.

#### Mechanical Agitation:

Mechanical agitation is a two-step method of fabrication that results in the formation of a phospholipid-shelled microbubble<sup>5</sup>. The drugs are incorporated into the phospholipids before microbubble formation<sup>5</sup>. The gas is then encapsulated by filling the headspace of a vial before agitation<sup>20</sup>. A heavier gas such as perfluorocarbon or sulfur hexafluoride is often used<sup>5</sup>. Heavier gases are favored since they are less water-soluble and less likely to leak during the fabrication process<sup>9</sup>. Ultimately, they possess a low solubility in the blood and allow for enhanced durability in the circulation compared with the first-generation microbubble agents<sup>9</sup>. Moreover, inert gases demonstrate high retention within the microbubble shell<sup>9</sup>. The vial is then agitated at several thousand oscillations per minute<sup>5</sup>. After, the loaded microbubbles are incubated prior to usage to ensure that macro bubbles are broken up<sup>18</sup>. This method is especially useful since it is versatile and gentle on fragile drugs or compounds<sup>5</sup>.

#### Sonication Method:

Sonication is a common method of microbubble fabrication. The resulting microbubbles are often coated in a protein or phospholipid shell<sup>5</sup>. This method requires the use of low frequency ultrasound at high intensity in an aqueous solution of microbubble core gas and shell material to disperse the gas<sup>5</sup>. Temperatures as high as 808°C are employed to ensure the formation of a stable outer shell<sup>5</sup>. The microbubbles formed have a high affinity for carrying DNA and a large variety of drug and compound molecules<sup>5</sup>. The usage of this method results in therapeutic drugs usually being loaded on the surface of the bubble<sup>5</sup>. This is due to both high chemical and temperature stress applied during the fabrication of the microbubble<sup>5</sup>.

## **Microbubble Compositions and Physiochemical Properties:**

Improvements in microbubble design have given rise to a variety of microbubble coatings and outer shells. These properties and variations are pivotal when fabricating and determining the best suited bubble for drug or gene delivery. These coatings are especially beneficial since they can easily be degraded by the liver and minimize the risk of accumulating waste, toxic anticancer drugs<sup>17</sup>. In this paper we will focus on three different outer shell coatings<sup>19</sup>.

### *Protein Shells*

Protein shell microbubbles were the pioneer formulations used in early contrast ultrasound imaging<sup>19</sup>. The first-ever FDA-approved microbubbles were coated in albumin<sup>19</sup>. Several proteins other than albumin have been used to coat microbubbles. Proteins are amphipathic, this means that they possess both a hydrophobic and hydrophilic site, making them highly surface active<sup>19</sup>. Overall, these bubbles are highly stable and retain their enzymatic activity for several months<sup>19</sup>.

### *Lipid Shells*

Lipid-coated microbubbles are one of the most useful formulations used for sonodynamic microbubble drug delivery and imaging. Since the lipid shell is inspired by nature, they are the most stable shells available<sup>19</sup>. These shells have multiple advantages. Phospholipids can self-assemble into oriented monolayers and encompass gas bubbles<sup>19</sup>. Moreover, lipid monolayers are highly cohesive resulting in a solid-like character and outer surrounding<sup>19</sup>. Furthermore, these microbubbles are compliant to area expansion and compression during ultrasound oscillations<sup>19</sup>. Finally, the lipid-coated shells facilitate drug delivery and molecular imaging by incorporating various lipid species by conjugation<sup>19</sup>.

### *Polymer Shells:*

Polymer coated microbubbles are a special class of microbubbles that are stabilized by a thick shell composed of cross-linked or entangled polymeric species<sup>19</sup>. Polymer microbubbles can vary in size ranging from 0.7-0.9  $\mu\text{m}$  in diameter<sup>19</sup>. Microbubbles with this coating have a shelf life of several months and are capable of carrying hydrophobic drugs, charged polymers like DNA, and targeting ligands<sup>19</sup>.

### **Drug Loading Characteristics:**

Multiple methods exist to attach various drugs to microbubbles. The simplest method is to directly attach the drug to the outer shell surface<sup>5</sup>. Drugs and other chemical compounds may be encapsulated between the phospholipid shell. As previously mentioned in the fabrication section of this paper, drugs can be incorporated inside of the microbubble directly using the agitation method<sup>5</sup>. The drugs and compounds incorporated and encapsulated in the microbubbles can range from cytotoxins to magnetic nanoparticles. The specific drug or compound chosen depends on the patient's diagnosis and the presence of any underlying health conditions to minimize the chance of any unwanted side effects or complications<sup>4</sup>.

### **Modes of Administration & Body Disposal:**

Microbubbles can be administered via several modes of injection: intravenous, intratumoral, and intraperitoneal<sup>17</sup>. The microbubble agents are incorporated in a solution diluted with physiological saline<sup>9</sup>. The microbubble solution may be injected as a slow bolus or continuous injection<sup>9</sup>.

### *Intravenous Injection:*

Intravenous injections are used to deliver fluid directly to the vein and both infusions or syringe injections can be used<sup>17</sup>. This mode of administration is the fastest and safest



route available. The microbubble solution is delivered throughout the body via circulation<sup>17</sup>.

#### *Intratumoral Injection:*

This mode of injection delivers high concentrations of solutions directly to the site of a tumor while reducing systematic toxicity<sup>17</sup>. However, this mode is used less frequently since it is highly invasive.

#### *Intraperitoneal Injection:*

Intraperitoneal injections require the injection of a substance directly into the peritoneum<sup>17</sup>. This mode of injection is used as a last resort and is more common in veterinary medicine<sup>17</sup>.

After circulation within the peripheral blood, microbubbles are cleared from the body through the liver and spleen<sup>9</sup>. The microbubble shells are trapped in the sinusoids of the liver or undergo phagocytosis by the cells of the hepatosplenic reticulo endothelial system<sup>9</sup>. The gaseous component of the microbubble is exhaled via the pulmonary system<sup>9</sup>.

### **Sonodynamic Microbubble Therapy Mechanism of Usage:**

Microbubbles are used to deliver drugs and chemical compounds directly to the site of the tumor. A probe is used to administer ultrasound waves<sup>14</sup>. Cavitation leads to the spontaneous growth and collapse of the microbubbles in low-pressure regions<sup>17</sup>. The collapse of microbubbles results in a force that impacts and causes damage to the cancerous tissues<sup>17</sup>. The outer shell of the bubble bursts and releases the drug or compound<sup>18</sup>. This particular form of delivery can penetrate impermeable tissues especially relevant in solid tumors found in pancreatic cancer<sup>14</sup>. In addition to direct antitumor action, the drug prevents cancerous cells from replicating by damaging

the endothelial cells in the capillaries. These are cells found primarily inside the lining of blood and lymph vessels<sup>13</sup>. The damage blocks off the vital resources that the cancerous cells need to survive and regenerate resulting in tumor shrinkage<sup>13</sup>.

### **Clinical Case Studies:**

Recently, sonodynamic microbubble therapy was explored in a clinical setting conducted by Kotopoulis et al. in 2013 in five patients with locally advanced pancreatic cancer<sup>7</sup>. The patients received standardized gemcitabine therapy in combination with sonodynamic microbubble therapy<sup>7</sup>. The results demonstrated that compared to a group of 80 patients treated with gemcitabine solely, the 5 patients were able to tolerate a greater number of chemotherapy cycles ( $16 \pm 7$  vs.  $9 \pm 6$  cycles). Moreover, tumor size was permanently reduced in 2 out of 5 patients, and the remaining patients showed reduced tumor growth<sup>7</sup>. Furthermore, no adverse side effects were reported in the study. This is the first report on sonoporation performed in a clinical setting and represents a pivotal step forward in the development of this novel technology.

In addition to the Kotopoulis et al. study, another clinical trial was held by Dimceviski et al. in 2016 at the Haukeland University Hospital<sup>6</sup>. The primary aim of this study was to evaluate the safety and potential of sonodynamic microbubble therapy. The secondary aim was to improve the chemotherapeutic efficacy of the treatment by exploring several different parameters to ensure prolonged patient survival and performance status<sup>6</sup>. Similar to the Kotopoulis et al. study, combination treated patients who received gemcitabine and microbubbles ( $n=10$ ) tolerated an increased number of gemcitabine cycles compared with control groups ( $n=63$  patients; an average of  $8.3 \pm 6.0$  cycles, versus  $13.8 \pm 5.6$  cycles)<sup>6</sup>. Moreover, in five patients, the maximum tumor diameter was decreased significantly after treatment (8.6cm to 4.2cm)<sup>6</sup>. Furthermore, the median survival in patients ( $n=10$ ) was also increased from 8.9 months

to 17.6 months<sup>6</sup>.

### **Advantages of Sonodynamic Microbubble Therapy:**

Multiple *in-vitro* and *in-vivo* studies have demonstrated that sonodynamic microbubble therapy improves cancerous tumor effects by reducing tumor growth, increasing tumor apoptosis, decreasing angiogenesis, and regulating protein expression<sup>17</sup>. Furthermore, this novel technology is considered a targeted therapy, therefore, the drug or compound used is delivered directly to the treatment site<sup>6</sup>. This mode of therapy leads to a reduction in the toxicity associated with certain drugs, especially, cytotoxins<sup>17</sup>. Moreover, this novel therapy leads to both rapid cellular uptake and enhanced nuclear uptake of drugs while decreasing drug efflux<sup>17</sup>.

Sonodynamic microbubble therapy has an enhanced tumor effect combined with gemcitabine delivery in mice with pancreatic tumors. When compared to mice receiving weekly treatment of gemcitabine alone or no treatment, mice who received the combined therapy presented a significantly suppressed tumor growth throughout twelve weeks<sup>17</sup>. The tumor growth can be visualized via 3D tumor volumetric ultrasound images over time<sup>17</sup>. The results of this therapy can be seen in the histology images. A more invasive border is present between normal tissue and tumor tissue in the control group and a significantly less invasive border is seen in the group who received the gemcitabine and ultrasound-mediated microbubble destruction therapy<sup>17</sup>.

### **Potential Use of Sonodynamic Microbubble Therapy to Deliver Tyrosine Kinase Inhibitors:**

Tyrosine kinase inhibitors (TKIs), like erlotinib, are a class of small molecule drugs that inhibit tyrosine kinases by inactivating proteins and signaling cascades<sup>8-10</sup>. When certain tyrosine kinases become mutated and overactive, these drugs can

serve as inhibitors and reduce tumor growth<sup>8-10</sup>. Erlotinib is one of the first FDA approved TKIs<sup>8-10</sup>. It was approved for cancer treatment in combination with gemcitabine in 2004 for patients diagnosed with locally advanced unresectable pancreatic cancer<sup>8-10</sup>. Erlotinib is one of the safest and most effective medicines prescribed for pancreatic cancer, however, after 8-12 months of treatment mutations of the ATP binding site result in shockingly high rates of resistance<sup>8-10</sup>. In addition to drug efflux, the use of gemcitabine can result in serious adverse side effects including anemia, leukopenia/neutropenia, and thrombocytopenia<sup>8</sup>.

Given the advantages of sonodynamic microbubble therapy, it is likely that filling these bubbles with the combined gemcitabine and erlotinib therapy could lead to a more effective treatment by decreasing the side effects of gemcitabine and adding a targeted therapy. In the Dimcevski et al. clinical trial, patients diagnosed with pancreatic cancer responded well to gemcitabine loaded microbubbles and experienced very mild side effects<sup>6</sup>. Also, patients were able to undergo multiple rounds of treatments which resulted in increased tumor shrinkage<sup>6</sup>. Based on these results, a new study is proposed: combining sonodynamic microbubble therapy with erlotinib. This combination treatment could serve as a more effective treatment regimen.

### **Additional Fields of Application:**

In addition to being utilized for cancer treatment, sonodynamic microbubble therapy can be applied to various medical domains including neurodegenerative diseases like Parkinson's disease and Alzheimer's disease<sup>20</sup>. This technology can transport drugs across the blood-brain barrier making it an excellent treatment option<sup>20</sup>. Furthermore, this novel technology can be applied to cardiovascular disease and used as a treatment plan for stroke patients<sup>20</sup>. Microbubbles are microscopic and are approximately the size of a red blood cell making them capable of passing through vasculature tissue<sup>20</sup>. Moreover, researchers

are looking into using microbubbles for transdermal delivery. Sonodynamic microbubble therapy has substantially improved the delivery of both micromolecular drugs, such as insulin, and immune responses caused by certain vaccines<sup>20</sup>. However, more research is required since skin properties vary as a function of temperature and humidity<sup>20</sup>.

### **Challenges Associated with Sonodynamic Microbubble Therapy:**

Despite the many advantages associated with sonodynamic microbubble therapy, this therapy still faces some challenges that require further research. These challenges include a short circulation time<sup>9</sup>. Overall, the elimination half-life of microbubbles in circulation is 5-10 minutes<sup>9</sup>. Also, after loading microbubbles, the diameter of the bubbles could surpass the diameter of smaller blood capillaries leading to limited penetration and associated difficulties with bloodstream diffusion<sup>17</sup>. Moreover, most experiments have been conducted in cell cultures and animal studies. More clinical trials are necessary to fully explore the benefits of this novel technology while reducing potential side effects and increasing efficacy.

### **Conclusion:**

While pancreatic cancer remains one of the most recalcitrant diseases with little improvement in the past few decades, the potential usage of sonodynamic microbubble therapy in biomedical applications is continually growing and sparking interest as novel formulations and methods emerge with new research and discovery. This form of technology is not only useful for contrast imaging, but also for diagnosing and treating a variety of diseases and illnesses including pancreatic cancer. Studies in mouse models have demonstrated more effective tumor size reduction when combining a cytotoxic cancer drug with sonodynamic microbubble therapy. More importantly, the first small clinical studies

have shown encouraging results in pancreatic cancer patients. In conclusion, this paper has showcased that sonodynamic microbubble therapy is an effective method to deliver various drugs and compounds to not only pancreatic cancer tumors but various targetable sites. Given the lack of improvement in pancreatic cancer survival, there is a clear unmet medical need for new treatments that are both safe and effective. I believe that sonodynamic microbubble therapy combined with both cytotoxic and targeted cancer drugs offers significant potential for the treatment of pancreatic cancer and other dismal diseases. I strongly encourage the active transition to additional clinical trials so patients can fully benefit from this novel technology.

## **Glossary:**

*\*All of the terms below have been adapted from the NCI Dictionary of Cancer Terms<sup>13</sup>*

**Anemia:** the condition of having less than the normal number of red blood cells or less than the normal quantity of hemoglobin in the blood. The oxygen-carrying capacity of the blood is decreased. **Angiogenesis:** blood vessel formation. Tumor angiogenesis is the growth of new blood vessels that tumors need to grow.

**Apoptosis:** a type of cell death in which a series of molecular steps in a cell lead to its death. One of the methods the body uses to get rid of unneeded or abnormal cells.

**Borderline resectable:** is neither clearly resectable nor clearly unresectable but rather implies a greater chance of incomplete resection in the setting of upfront surgery.

**Cavitation:** the creation, vibration, and collapse of small gas-filled bodies by the ultrasound beam.

**Drug efflux:** transport of drugs out of a cell. A mechanism of drug resistance.

**Familial atypical multiple mole melanoma:** An inherited condition marked by the following: one or more first- or second-degree relatives with malignant melanoma; many moles, some of which are atypical; and moles that have specific features when examined under a microscope. Familial atypical multiple mole melanoma syndrome increases the risk of melanoma and may increase the risk of pancreatic cancer.

**Familial adenomatous polyposis:** is an inherited disorder characterized by cancer of the large intestine (colon) and rectum.

**Hydrophilicity:** Hydrophilic molecules are molecules that can dissolve in water. These molecules must have a charge (positive or negative) to interact with water, which is polar.

**Hydrophobicity:** is the physical property of a molecule that is repelled from water.

**Intracellular Phosphorylation:** phosphorylation is the main regulatory modification of intracellular proteins and is involved in the majority of cellular processes.

***In-vitro:*** experiment performed or taking place in a test tube, culture dish, or elsewhere outside a living organism.

***In-vivo:*** experiment performed or taking place in a living organism.

**Leukopenia: (neutropenia)** A low white blood cell count is a decrease in disease-fighting cells (leukocytes) in your blood.

**Locally advanced pancreatic cancer:** locally advanced pancreatic cancer has grown into major blood vessels, so the tumor can't safely be removed by surgery.

**Metabolism:** the chemical processes that occur within a living organism to maintain life.

**Mid epigastric pain:** is a name for pain or discomfort right below your ribs in the area of your upper abdomen. It often happens alongside other common symptoms of your digestive system.

**Migration:** cell migration is a central process in the development and maintenance of multicellular organisms.

**Peutz-Jeghers Syndrome:** a genetic disorder in which polyps form in the intestine and dark spots appear on the mouth and fingers. Having this syndrome increases the risk of developing gastrointestinal cancer and many other types of cancer.

**Peripheral blood:** is the flowing, circulating blood of the body.

**Peritoneum:** the serous membrane lining the cavity of the abdomen and covering the abdominal organs. **Phagocytosis:** The process by which a phagocyte (a type of white blood cell) surrounds and destroys foreign substances and removes dead cells.

**Resectable state:** capable of being resected: suitable for resection resectable cancer.

**Sinusoids:** are low-pressure vascular channels that receive blood from terminal branches of the hepatic artery and portal vein at the periphery of lobules and deliver it into central veins.

**Slow bolus:** in medicine, a bolus is the administration of a discrete amount of medication, drug, or other compounds within a specific time, generally within 1 - 30 minutes, to raise its concentration in the blood to an effective level.

**Sporadic:** cancer that occurs in people who do not have a family history of that cancer or an inherited change in their DNA that would increase their risk for that cancer.

**Standing Diabetes:** a chronic disease associated with abnormally high levels of the sugar glucose in the blood.

**TKI:** abbreviation for tyrosine kinase inhibitor.

**Thrombocytopenia:** is a condition in which you have a low blood platelet count. Platelets (thrombocytes) are colorless blood cells that help blood clot. Platelets stop bleeding by clumping and forming plugs in blood vessel injuries.



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## Marxian Primitive Accumulation as an Expression of Weber's 'Spirit of Capitalism'

*Steven Mattero*

### **Abstract**

No historian can pinpoint when feudalism died, but changes in European financial markets, foreign policies, and factories signaled the birth of a new economic system. In the early seventeenth century, the word "capital" began to refer to "a person's wealth" and quickly evolved to mean "the wealth employed in carrying on a particular business." Max Weber has famously observed that industrial innovations occurred shortly after the Protestant Reformation, and offers a theory of how the Protestant work ethic directly contributed to, and even caused, an attitude he calls "the spirit of capitalism." Karl Marx wrote about the emergence of capitalism following the abolition of feudal structures and the earliest exploitation of the proletariat. How are these divergent methods of understanding the origins of this economic system to be understood? It is proposed that an attempt to combine them be made: Weber's model clarifies *why* capitalism began, while Marx's shows *how* capitalism began.

## Introduction

As an economic system, the origin of capitalism can be vaguely pinned to sixteenth-century Europe. But where did it come from, and how did it come to dominate so quickly? At least half a dozen scholars have propounded unique theories on the transition of pre-capitalist economies to capitalist economies, but two thinkers who are rarely thought of in the same context have somewhat converging opinions, despite their very separate methodologies. I will be comparing Max Weber's connection between the Protestant ethic and capitalism with Karl Marx's ideas on the origins of capitalism.

Max Weber observed that many owners of capital in the eighteenth century were Protestant and examined a few ideological reasons that might explain a widespread pattern of behavior. These are the most fundamental questions of a sociological study: How do people behave, and Why? How does it shape society? Weber's thesis proposes that the Protestant Reformation gave rise to personal and theological motivations, which resulted in a change of attitude toward money and financial success. He argued that several ideas unique to Protestantism correlated with and facilitated the growth of what he called "the spirit of capitalism." To what extent this may be said to have caused actual capitalism remains a complex challenge.

Karl Marx interpreted the history of England in terms of "so-called Primitive Accumulation," addressing the problem of how capitalism could have begun from an economic perspective. According to Marx's definition of capitalism and the mode of production given in Volume 1 of *Capital*, it appears that the cycle must have no origin, but finds itself in infinite regress. Hence, he uses England as an example of how the proletariat formed, explaining a series of corporate and government actions that dispossessed the peasants and pushed them to the industrial cities, becoming free from the means of production.

Marx's approach appears much more precise: If a historian wants to know where something began, he looks at trends

and events recorded by the people of the time. Marx recounts relevant details in the development of England's capitalist economy: the Enclosure movement, the English Reformation, and the Glorious Revolution. He explains their economic repercussions, offering a simple answer to the question, "How did capitalism start in England?" The caveat, however, is plainly read in the title of the chapter: this is "so-called Primitive Accumulation." Nevertheless, contrast the precision of this historical explanation with the philosophical generalizations of Max Weber. To one seeking "hard facts" in his pursuit of historical answers, Weber's social science might seem especially soft. I will show, however, that an understanding of these divergent approaches—Weber's sociological and Marx's economic—is not only integral to their respective fields of study but also useful in interweaving historical explanations. No conflict between them is immediately necessary, and after considering them in detail, an attempt will be made to reconcile them in an exhibition of both the methods and motives in the birth of capitalism. Marxian Primitive Accumulation is in fact an expression of Weber's spirit of capitalism, as in the individual capitalist whose actions and accumulations are an outgrowth of his spirit within him.

## **Part I: Capitalism as the Result of a Religious Ethical System: Max Weber**

Max Weber originally published *Die Protestantische Ethik und der Geist des Kapitalismus* in 1904-05, as two essays. The classic challenged the academic methodology of his time and is generally regarded as the beginning of the field of sociology. However, *The Protestant Ethic and the Spirit of Capitalism* (from here abbreviated as PESC) would be unusual by today's standards of sociology; rather than focus on the beliefs and behaviors of a contemporary population, he traced "the manner in which 'ideas' become effective in history" (Nielsen 55). Beginning with religious life in the Middle Ages, Weber follows such theological and cultural developments as the

teaching of Jean Calvin, the business ethics of the Puritans, the mindset of Benjamin Franklin, and finally the global economic system that emerged with a trace of its spiritual foundations. In spite of this tidy progression, Weber's narrative is "far from linear" due to some necessary generalizations and inductive logic (Nielsen 57). Yet compared with Weber's other works, PESCS is the most documented, and holds much historical and sociological value because of the research behind it.

In the first essay of PESCS, Weber observed that those "who own capital, employers, [and] more highly educated skilled workers" are often Protestant (Kalberg 61). He explored some initial explanations—perhaps they inherited their wealth from previous generations?—but concluded that these explanations were unsatisfactory. He determined rather that these modern men had what he described as the spirit of capitalism: a utilitarian ethic, apprising business savvy, and excellence in one's vocation. Was this something unique to them as Protestants? he wondered.

Before this question may be answered, we must more fully define the fundamental term "capitalism" and explain what some might describe as its "spirit." Here, I refer to the primary sources, starting with Weber "We will define a capitalistic economic action as one which rests on the expectation of profit by the utilization of opportunities for exchange, that is on peaceful chances of profit" (Parsons xxxii). So, capitalism is an economic system founded on such actions. Marx describes capitalism far more precisely in his magnum opus *Capital: A Critique of Political Economy*:

...a system in which the worker does not employ the means of production, but the means of production employ the worker, the law by which a constantly increasing quantity of means of production may be set in motion by a progressively diminishing expenditure of human power; thanks to the advance in the productivity of social la-

bour.... (798)

The ‘means of production’ is any private property which facilitates the creation of capital. The above quote describes a system in which the laborers have no means of production, and so rely on wages determined by the labor market. As we will see when we explore portions of *Capital: Volume I*, the question of when capitalism began depends entirely upon how one defines it. For of course, greed and gain, wealth and poverty, labor and exploitation can all be traced as far back for all of recorded history, and probably much further. Capital is different in that the money is always in motion, constantly reinvested into the means of production. The miser who saves as much as possible and the hedonist who spends it for his own consumption are not capitalists because they can expect no profit from their actions (Marx 735). The capitalist is always spending on labor, which will lead to surplus value of capital.

The “spirit” of such capitalism, then, would mean not only a strong work ethic but also an opportunistic mindset resulting in a strange combination of both greed and altruism. According to Weber’s view, the true workaholic is not addicted to work because of his income but because labor is an end in itself, or a calling. In the mediaeval Catholic mindset, religious exercise was something for church on Sunday or to be done by the priests. It was separate from secular work. Weber referred to this as a social dualism of the laity and the priesthood.

Following the Reformation, Weber showed that there is now, not only a shift in the authority, but also in the “organization of the believer’s life” (Nielsen 58-59). This, according to Weber, would become Protestantism’s most influential contribution. The manner in which Martin Luther used the word *beruf* (calling, vocation) changed the way early Protestants conducted their business: to honor God requires one to excel in every aspect of life, not simply in the devotion of the soul. Luther believed that the men of God ought not to be celibate, and that the laity could pray and confess directly to God without the

priest as intercessor. Modern man rejected the separation of the secular and spiritual: all work is God's work.

Benjamin Franklin wrote prolifically, not least on financial management, and Weber emphasizes the utilitarian nature of his ethics. Simply advocating for hard work and frugality would be quite uncontroversial, ethically—but arguing for honesty and integrity because of its benefits for the individual, decidedly not. Weber quoting Franklin,

He that is known to pay punctually and exactly to the time he promises, may at any time, and on any occasion, raise all the money his friends can spare. This is sometimes of great use. After industry and frugality, nothing contributes more to the raising of a young man in the world than punctuality and justice in all his dealings; therefore never keep borrowed money an hour beyond the time you promised, lest a disappointment shut up your friend's purse for ever. (qtd. in Parsons 15)

Franklin's strict father taught him the reformed tradition (Calvinism), and despite Franklin's disenchantment with religion and conversion to deism, Weber sees this training as the basis of a moral attitude of both self-discipline and self-interest.

In PESC's second essay, Weber discussed four specific Protestant movements and their views of asceticism, or self-denial and self-discipline, focusing on its theological foundations and implications. Lutheranism, despite the notion of the calling, was never ascetic (Fullerton 179), although it sought to honor God in everything. Weber spends more time discussing Calvinism than the other Protestant movements combined. Although Methodists, Baptists, Mennonites, and Quakers all played a role in developing the concept of the calling in their own theology, the Calvinists went one step further with a doctrine called predestination. Critics of Calvinism may easily mischaracterize predestination. The following depiction is not meant to treat it fairly but to show what Weber believed the ramifications of



this doctrine to be. The belief that God in his sovereignty and foreknowledge elects some men to be saved and the others to be damned creates with it a motivation in the believers' hearts to demonstrate that salvation and to "give diligence to make your calling and election sure" (2 Peter 1:10). How can one be sure whether he is saved or damned? What evidence can he find of God's blessing and election? Might not success in the secular expression of our calling accompany salvation through a spiritual calling? The Calvinist could only find assurance in his righteousness and faithfulness; hence, the need for asceticism, or self-discipline.

The economic implications of asceticism, according to Weber, were that the spirit of capitalism grew quickly among ascetic Protestants, particularly Puritans. It has been argued the doctrine of predestination works against American individualism because the spiritual state of each man is in God's hands: Can any man forge his own destiny? (Jennings 303). But Weber overlooked this determinism because of Calvinism's subtler, more fundamental qualities. The virtues of frugality and industry both glorify God, and any utilitarian motivations are secondary, if not outright wicked, to the Calvinist. Their beliefs "emphasized the spiritual isolation of each person" (Kalberg 109), and are very much in line with the discipline required from both entrepreneurs and wage laborers.

In later writings, Weber approached the question in the opposite direction: Why was the "spirit" of capitalism facilitated less by other religions? Having contrasted the Protestant ethic with the Roman Catholic dualism (separating the laity from the spiritual *virtuosi*), he then turned to Islam, Hinduism, Confucianism, Buddhism, and ancient Judaism in three volumes titled *The Economic Ethics of the World Religions*, contrasting various schools of religious thought and the economic ethics they portended. Interestingly, Weber chose to emphasize the posture each belief system took towards sorcery and magic. This rather subjective consideration paints Protestantism as truly unique,

and perhaps the most rational—even the most secular—compared with other religions, who can be portrayed as mystical, which to me immediately carries colonialist undertones. I bring your attention to his analysis of religious thought in China.

...the Confucian frame of mind, deifying 'wealth,' could favor *political*-economic measures (as did also the cosmopolitanism of the Renaissance in the West) ... In no other civilized country has material welfare *ever* been so exalted as the supreme good as in China ... [Yet] no intermediate link from Confucianism and its ethic ... led to a *middle class, methodical organization of life* ... Puritanism constitutes the radically opposite example ... In contrast to [the mystic's] flight from the world, rationalization occurred in spite of—or indeed because of—an ascetic rejection of the world. (Kalberg 281)

Weber's assessment of Puritanism as rational, as rejecting magic and mysticism more explicitly when compared to other religions, may be true both historically and theologically. Such methods of comparing cultures are open to accusations of Orientalism, in that they cast the Western mindset as superior or better disposed to economic success. Despite this weakness from our contemporary perspective, his arguments do serve to describe the unique phenomena that coincided with the birth of capitalism in modern Europe.

Max Weber, both in PESC and in later writings, argues that Protestantism resulted in greater individual freedom, and encouraged an economic ethic unique from other religious groups. But how could this be the whole picture? A fuller account of the birth of capitalism needs not only to account for its spirit but also its flesh and bone.

## Part II: Capitalism as the Result of Primitive Accumulation

Karl Marx published *Capital: A Critique of Political Economy* in German in 1867, the first of three volumes. Volume I has eight parts, explaining his theories of value, money, and exchange. Capital, as discussed above, is not merely money or goods, but the value transformed from money (M) into commodities (C) through labor, and then back into money (M) when the commodities are sold. This movement, “M-C-M,” designates the circulation of money as capital, while “C-M-C” shows the circulation of commodities as capital, but the former may be called capital accumulation because of the surplus value which is gained in selling the commodities for a profit (248-49).

The cycle naturally prompts the question: Did money or the commodity come first? The chicken-egg dilemma demanded of Marx not only a theoretical and mathematical explanation but also a description of the historical origin of the cycle. Marx quotes the French economic historian Sismondi after he asks, “The original capital [in our example] was formed by the advance of £10,000. Where did its owner get it from? ‘From his own labour and that of his forefathers’, is the unanimous answer of the spokesmen of political economy” (728). But Marx believed the truth was far less innocuous.

He tackles this question in Part Eight, “So-Called Primitive Accumulation.” Why is it “so-called”? In a conference given by Marx in 1865 to members of the International Working Men’s Association: “The inquiry into this question would be an inquiry into what the economists call: *The Previous* or *Original Accumulation*, but which ought to be called the *Original Expropriation*” (Eyguesier 843). Marx exposes this in recounting a history of England, in which a pre-capitalist economy transitioned to capitalist by “forcible expropriation,” an extraordinarily violent process wherein the agricultural population is definitively separated from the land it works (Read 26). “The immediate producer” could only sell his labor when he was

free of the soil, or of the guilds, which also meant, according to Marx, that “they had been robbed of all their own means of production, and all the guarantees of existence afforded by the old feudal arrangements. And this history, the history of their expropriation, is written in the annals of mankind in letters of blood and fire” (875).

It may seem that the transformation of feudal appropriation into capitalist exploitation need not have been so sudden. There are three significant moments in England to which Marx attributes the transformation of the peasant class into the proletariat. The first moment is the Enclosure movement, during which, according to the Marx, the landlords turned farmland into pasture. This allowed them to cut their costs because rather than supporting multiple families, the land could be worked by a few herdsmen (879). Marx applauds an act of Henry VII limiting this expropriation, and cites Francis Bacon’s history, saying that the legislation “maintained with such a proportion of land unto them as may breed a subject to live in convenient plenty and no servile condition, and to keep the plough in the hands of the owners and not mere hirelings” (qtd. in Marx 880). However, later, Marx laments “the process was carried on by means of individual acts of violence against which legislation, for a hundred and fifty years, fought in vain” (885).

The second moment Marx notes was the English Reformation under Henry VIII, which resulted in the dissolution of Catholic monasteries. “The estates of the church were to a large extent given away to rapacious royal favourites, or sold at a nominal price to speculating farmers and townsmen” (881). The poor who had been beneficiaries of their charity were put out into the countryside. Finally, the Glorious Revolution, the third and final moment Marx addresses, resulted in the sale or even subsidy of the Crown Estates to capitalist “profit grubbers” (884) and increased “the supply of free and rightless proletarians driven from their land” (885). It also led to the Bills for Inclosure of Commons, which “decrees by which the landowners

grant themselves the people's land as private property, decrees of expropriation of the people." The reign of William and Mary created massive inequality and exploitation, laying the groundwork for the Industrial Revolution. For Marx, all these changes in England, which "bourgeois historians" generally agree to be positive forces in creating the modern state, violated the rights of workers and forcibly impoverished them.

Queen Elizabeth, upon seeing the state of the poor after the Reformation, enacted the Poor Laws in 1601, which made it compulsory for parishes to levy a poor rate to fund financial support. In a lengthy footnote (882-83), Marx relates the reaction of a group of farmers to the Poor Laws, who propose a way for them to be put to work. "The 'spirit' of Protestantism may be seen from the following..." and describes the austerity, indeed, the penuriousness of the landowners. They propose that the poor be locked up and put to work; if they refuse, they will be "entitled to no relief. This, it is hoped, will prevent persons in distress from wanting relief." Marx might have attributed the severity of the farmers to another characteristic, but he chooses to indict them as Protestants. This is not the straightforward denunciation of religion as superfluous, as exhibited in *The Communist Manifesto*. Instead, Marx sees Protestants as looking to make a profit on those less fortunate: rather than deserving charity, or even simple punishment, the poor are an opportunity. Incredibly, the farmers thought such treatment would act as a deterrent, and so reduce the number of poor. Marx pointing to this proto-Malthusian ethic shows congruity between his and Weber's view of Protestantism.

This process that created the modern English working class made them free in Marx's dual sense: free from their oppressive feudal lords, but also free from the means of production. Their choice became to either join the industrial process as commodities themselves, in that they must sell their labor for wages, or to starve. This fed into the development of large-scale industries at a time of colonial expansion, and together these

gave rise to the modern global economic system (Eyguésier 836). At the same time, wage laborers who held rights nominally had little defense against exploitation from employers and landlords in reality (Marx 805, 808).

### **Part III: Protestant Theology and Primitive Accumulation: Strange Bedfellows?**

Marxist philosophy, which must not be characterized as anything less than revolutionary, is perhaps underrated in the public mind as being merely economic theory. This is likely the reason that few have ever considered how Marxism interacts and overlaps with ideas outside economics, such as Weber's theory of sociology that we have discussed. Scholars and laymen alike have misinterpreted, or misapplied, Marx's ideas—including Max Weber. If Weber himself could not see a reconciliation between these two systems, how can we hope to find it?

Wolfgang Mommsen discusses Weber's criticism of Marx's methodology, commenting that his interpretation of Marx is "somewhat crude and unsophisticated." According to Mommsen's description, Weber "maintained that it was not possible to ascertain objective laws in the historical process," and even that he "did not believe in the existence of any 'objective laws' in reality. It was, at best, possible to construct law-like theories of social processes by means of ideal-types" (375). A subjective, non-linear view of history places Weber squarely in the twentieth century, but is this philosophy so antithetical to Marx? Mommsen again: "Max Weber believed that this Marx's theory did not at all live up to scientific standards" (375). It is not clear which of Marx's writings Weber is criticizing here, but this seems like hypocrisy, if not dramatic irony. Are Weber's methods so much more scientifically rigorous than Marx's? Mommsen summarizes,

Marx's theory ... views world history as a dialectical process by which precapitalist social structures give way to bourgeois capitalist structures and are eventually

overturned by socialism. Such ideal-type constructions of the historical process, however, do not say anything about reality. Weber's radical position on this point was a logical consequence of his fundamental assumption that the historical process as such is meaningless and more or less chaotic. We can understand a limited part of history only after developing concepts and paradigms that are based on ultimate cultural values. Hence, Weber was willing to accept Marx's interpretation of history as a sequence of various forms of production as a most useful hypothesis to gain important insights into the nature and development of modern industrial capitalism. (376)

That is all Marx intended. Why would Weber think that Marx was attempting a scientific, objective, economic history of capital and primitive accumulation?

Likewise, other scholars of Weber's time seemed to have misunderstood Marx's writings, too. A contemporary review of PESC hailed it for seeing what blind economists would miss (although he did not refer to any economist in particular): that the causes of Western ascendancy and economic success had been "something deeper, more transcendental, more idealistic" (Fullerton 182). Yet Marx would not disagree: religious or otherwise metaphysical convictions hold greater power over men than market forces. The idea that capitalism was rooted in something uniquely Christian would likely not have been novel to Marx.

In spite of such misunderstandings, there is much common ground. PESC shows how religious thought prepared Europe for capitalism, and there are other perspectives which speak to this point. Classical economic thinking trusts in the omniscience and omnipresence of an 'Invisible Hand' in much the same way that Protestants, especially Calvinists, are required to trust God with their eternal destiny (Urquhart 19). If God is sovereign over my soul, certainly he also controls who is wealthy and who is poor, which justifies the economic inequali-

ty we see around us (Fullerton 193). Likewise, market forces—immanent, immutable, and divine—work in mysterious ways. The Invisible Hand is the Judge who puts down one and sets up another.

This is the paradox of capitalism: hat the individual is the keeper of his own destiny, whether to fail or prosper—yet, on the aggregate level, who can know the mystery of the Invisible Hand? Neoclassical attempts to explain it veer towards the rocks of structuralism, because individual actions, though “free,” are ultimately limited by the laws of the market, whatever they are. This dichotomy is mirrored in Christian theology, which may be why Christians attached themselves early to free market ideas.

One difficulty in comparing Weber’s and Marx’s views with respect to their historical details is that Marx focused on England, which comprised a very different brand of Protestantism than continental Europe or the American colonies. However, in *Capital*, there are several descriptions of a capitalist that coincide with Weber’s image of the ethical Protestant. In dispelling the myths previous political economists concerning surplus value, Marx notes that “the accumulation of commodities in great masses is the result either of a bottleneck in circulation or of overproduction” (735), which means that the capitalist objective is not consumption spending or hoarding but re-investment. This is what Weber was saying about Protestants. The puritans have no love of money. They are not hoarders and are not mindlessly buying commodities. They reinvest their wealth to continue the cycle of capital. Increase is their calling. However, this will not always be true of capitalists because it is only in the ideal sense that they reinvest all surplus value in the means of production—in reality many of them do not. Again concerning the ideal capitalist: “...in so far as he is capital personified, his motivating force is not the acquisition and enjoyment of use values, but the acquisition and augmentation of exchange-values. He is fanatically intent on the valorization



of value; consequently, he ruthlessly forces the human race to produce for production's sake" (Marx 739). This exhibits the Protestant ethic as well. As strange as it seems that followers of Christ treat humanity in this cruel manner, the greater sin is waste: to waste time or money is to waste life, and the Protestant sacrifices much to avoid waste.

We see above that Marx's description of a capitalist fits excellently with Weber's logical sequence. Marx's logical sequence explaining the divorce of the producers from the means of production does not offer the type of ideological explanation which Weber gives as to why capitalism began. But it does show how a disciplined population with the proper religious justification gained the legal, social, and economic opportunities to become a part of a new capitalist system. Thus they are reconciled: the Protestant Ethic provides the *why*, and Primitive Accumulation provides the *how*.

## Conclusion

Roman Catholic doctrine and canon law in the Middle Ages limited basic liberties in an oppressive system. The economic system that emerged from the Scientific Revolution and the Enlightenment promised to liberate the individual and lift society into a new age. But to many this promise rang hollow. Capitalism has oppressed the proletariat quite as much as feudalism did the serf, and far more efficiently. The rationality humanity had hoped would be its salvation became a different tool of its exploitation. The godless critic might point to Christianity as the common thread within both capitalism and Catholicism: a fundamental principle therein leading to inequality and expropriation. The only defense might be that these Christian principles have been—nearly since their inception—misappropriated as a means to an end, and continue to be so.

Seeing how primitive accumulation began by forcing a new class of laborers to create surplus value illustrates the universality of the new economic system. The kind-hearted

Protestants were not exempt. Seeing that Protestant doctrine not only permitted but fully impelled an ethic which furnished the new system with religious justification and a noble character illustrates the simple optimism—nay, the naiveté which accompanied the spirit of capitalism. Max Weber and Karl Marx both connect a historical reality with fundamental ideas. Both drew lines between philosophy and behavior—lines from the Dark Ages to the Enlightenment, while simultaneously questioning the nature of ‘dark’ and ‘light’ in each epoch.

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Enslaved Heroes: An Inquiry into California's  
Imprisoned Firefighters  
*Graham Munro-Ludders*

**Abstract**

The growing frequency and scale of wildfires occurring on the west coast of the United States, especially in California, require a larger mobilization of firefighters. Of these firefighters, many are imprisoned firefighters. This brings attention and concern to the use of prison labor, which in California constitutes 40% of the bodies responding on the front lines of the wildfires. This leads to a broader inquiry concerning the California carceral system at large, insofar as “fire camps,” defined as prisons located in close proximity to sites of frequent fires, are forged by the same mechanisms which create the overpopulated prison facilities despite a trend of decreasing crime. Section I will investigate the historical backdrop by analyzing the “California Paradox”—the era in which California expanded incarceration and prison infrastructure despite an overall decrease in crime. Section II will describe the inmate populations inhabiting the fire camps. Section III will explicate the legal philosophy which informs prisons on how to deal with and treat inmates at large. This section will then turn toward its implications for prisoner firefighters. Section IV will examine the forces which perpetuate the institutionalized forms of discrimination that prisoners face upon leaving, which makes it difficult for them to readjust and more likely to engage in criminal behavior again. One example is the legal barriers that prisoner firefighters face upon release, which bar them from employment in the field in which they are trained. This section will include a discussion of employer discrimination at large, the “collateral damage” (such as publicly available internet access to criminal records) prisoners face upon release which limit their

ability to re-enter society. This section will conclude by discussing how all these mechanisms of discrimination relate to prisoner firefighters. Lastly, Section V will thread the paper together into an explanation of the larger “ecosystem” which perpetuates the cycles of incarceration and the exploitation of prison labor.

## Introduction

As the wildfires on the west coast of the United States increase in scale and intensity every decade, epitomized by the unprecedented 2020 wildfire season in California and Oregon, the heroic role of firefighters to protect the public against the wrath of man-made catastrophes is more important than ever. However, what is absent from the public gaze, is the fact that many of these firefighters are prisoners. Some claim that performing heroic labor is a service not only for the public, but also for the prisoners themselves, as they experience a “hard day’s labor” as punishment for their crime. However, upon investigation of the forces which collect individuals into the carceral orbit, the grueling conditions they experience performing this labor, as well as the eternal consequences of a criminal record faced upon release; it is abundantly clear the nature of this “opportunity” proves deeply exploitative and no different than slavery. In this vein, something which I kept at the forefront of my consciousness during this inquiry is the 13th Amendment of the United States. It reads: “Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction” (United States Constitution, emphasis added). Thus, slavery cannot exist in any capacity except within prison environments. With this context, I bring forward this paper which investigates the inner workings of the prison system in the United States, and in particular the phenomena of prison “fire camps” in California to illuminate the prison system’s function, the exploitation of labor. The massive prison population of non-white people in particular who are collected, exploited, and disposed of are the natural consequences of system which depends upon the exploitation and destruction of bodies to maintain itself. Firefighting is merely one example of this system’s dynamics, and exemplifies the contradiction prisoners face upon release, as these prisoners are systematically denied opportunities to

fight fires as a career, despite performing the same labor during their prison sentence. Before examining the phenomenon of prisoner firefighters in California, some historical context is needed to understand the rise of incarceration in the 1980s. This next section will thus clarify the profoundly unjust nature of the labor prisoners are forced to perform on the front lines fighting wildfires, as well as the continual destruction of their freedom and livelihood upon their release.

### **The California Paradox**

The “California Paradox” refers to the historical contradiction, beginning in the 1980s, in which the call for increased incarceration occurred during a time when rates of overall crime were decreasing. This contradiction suggests that the presence of crime did not catalyze the “rallying cry” to expand the California carceral apparatus. Rather, given the racial skew of those incarcerated, its purpose was the collection and displacement of racial minorities, namely Latino and Black peoples. This “Paradox” served two purposes: first, it respatialized the distribution of racial groups into segregated populations—namely penal institutions. Second, it provided penal institutions bodies to perform labor. This brief history serves as the necessary backdrop from which the paradoxical nature of fire camps—representing merely one manifestation of the carceral system—can be understood.

The paradox began in the 1980’s, a time in which Governor Ronald Reagan famously called for “law and order” in response to California’s economic depression and a perception of moral degradation (Gilmore 40). At the time, California was in the midst of an economic crisis given its increasing economic reliance on military contracts in the realm of research, which slashed the number of assembly line jobs as military spending gravitated toward high paid research positions rather than factory level jobs. These industrial jobs employed a far greater number of low-income and middle-class peoples. Another change

which had been occurring simultaneously to the economic instability was increased immigration of peoples into California from Central American, particularly from Mexico, El Salvador and Guatemala.

These alterations in the sociological and economic structure led to three consequences: “(1) the changing mix of jobs and industrial and residential location; (2) Anglos’ fear of their demotion to minority status, coupled with capital’s differential exploitation of labor market segments defined by race, gender, locality, sector, and citizenship; and (3) the state’s failure to put idled capacities back to work through infrastructural, educational, employment, and other projects” (Gilmore 57). Economic precarity, coupled with increased proportions of minorities in California, as well as the perception of rampant “moral degradation” led to concomitant state action in order to combat these perceived threats. In the proceeding discussion, I will examine data which explicates the consequences of these demands, namely the dramatic shift in incarceration which primarily targeted Latinos.

When one explores historical crime trends in the United States, it is clear there is a period of gradually increasing crime in all categories between 1952 to 1980. Specifically, the rate of violent crime rose 4% relative to property crime, which increased by 8%. However, this reached its peak in the 1980’s when a dramatic decrease in all categories of crime ensued. During the period between 1980 and 1990, the California Crime index fell by 7%, violent crime fell 4.2%, and property crime fell 8.3%. The decrease in crime seems out of step with the aforementioned context, in which a period of moral degradation was allegedly pervasive. This alarming message resulted in a widespread understanding that crime was out of control, and thus needed the government to usher in “law and order” to restore society back to stability.

Despite the gradual increase in property and violent



crime from 1950 to 1967, historical trends show that the rate of incarceration did not change to a significant degree. It, in fact, plateaued between 1950 to 1969 (Zimring 86). This is odd against a backdrop in which the real rate of crime had been gradually increasing. It would be expected that a steady rate of incarceration would match the real rate of crime, but the data suggests that incarceration did not change, despite increases in total crime. When one considers trends in crime, one can see that 1969 to 1980 marked a marginal decrease in the rate of imprisonment against a backdrop of a continual increase in crime. The subsequent period, 1980-1990, is thus remarkably interesting given an unprecedented increase in the rate of incarceration. From 1980 to 1984, the rate of real crime had decreased (measured apropos the California Crime Index) for the first time in decades, from a rate of thirty-nine hundred crimes committed out of a population of one hundred thousand, to thirty two hundred (Gilmore). Despite a decrease in the overall rate of crime, the rate of imprisonment had nearly doubled, from two hundred to four hundred out of a population of one hundred thousand. Consequently, California prison populations nearly doubled by twenty thousand bodies (Zimring 86). In the following period, from 1984 to 1990, the California Crime Index had increased slightly in the first two years, from thirty two hundred to thirty four hundred crimes committed out of one hundred thousand people, then plateaued until 1990 (Gilmore). Despite this marginal increase and concomitant plateau in the rate of crime, the rate of imprisonment had skyrocketed the rate of imprisonment from four hundred to nine hundred, which imprisoned an additional fifty thousand bodies (Zimring 86). In any aforementioned period, the rate of incarceration did not correspond to the real levels of crime.

FIGURE I: CDC PRISONER POPULATION BY RACE/ETHNICITY

Year	Total Number	Anglo (%)	African (%)	Latino (%)	Other (%)
1977	19,623	43	34	21	2
1982	34,640	36	36	26	2.5
1988	76,171	30.8	37.1	27.8	4.3
1995	135,133	29.5	31.3	34.1	5
2000	162,000	29.4	31	34.8	4.8

Source: (Gilmore)

Figure I depicts the racial demography of prison populations in California between 1977 and 2000. It illustrates that the proportion of Whites in prison had decreased 14.6%, African-Americans in prison decreased 3%, and the proportion of Latino people in prison increased 13.8%. Further, the rate at which the proportion of Whites people fell—14.6%—was almost identical to the rate of increase in imprisoned Latino peoples. This data is consistent with the aforementioned context insofar as the call for “law and order” aligned with the gradual release of White peoples from prison, coupled with a near identical increase in the proportion of Latino peoples. This period also aligns with the prior “wave” of immigration from Latin American countries, which suggests that the call for law and order was racialized against Latino people.

In the years that followed 1980, crime gradually decreased, yet the calls from Republican Governor Deukmejian to increase the state’s ability to fight crime resulted in a continued expansion in policing and prison infrastructure whose function was to “incapacitate” offenders (Gilmore 95). In combination with a new set of drug laws, the “three strikes” law that imposed life sentences upon any third criminal offence, the rate and length at which people were incarcerated dramatically increased (Gilmore 96-7). This resulted in intense criminalization of African-Americans and Latinos, who over time were subject to increased rates of incarceration relative to Whites.

The aforementioned analysis supports the fact that

Latino and Black people were not committing more crime than their White counterparts. This is evident given the overall decrease in crime and the fact that prison populations nearly doubled in size. Coupled with the dramatic disproportionalities associated with the number of minorities who were incarcerated relative to Whites, the insecurity suggested by a pronounced surge in “law and order” was thus racially motivated. Insofar as the carceral consequences which followed the call for “law and order” resulted in the extraordinary expansion of incarceration primarily for Latinos in California following an increase in immigration from Central America, the moral degradation that alarmed Californians was—in actuality—the perceived racial insecurity of Whites. Figure I supports this, as the only racial group to decrease in regard to the rate of incarceration were Whites, and was inversely correlated with an identical increase in incarceration for Latinos. This racialization of imprisoned people had a profound impact on who becomes imprisoned firefighters, the subject I address in the proceeding analysis.

### **What Are The Fire Camps? And Who Are The Inmates?**

In California, there exist forty-two “fire camps” scattered throughout the state which are representatives of the Conservation Camp Program—a vestige of the New Deal—which are tasked with the management of wildfires in the depths of California’s forest preserves and forests. These camps are inhabited by 4,100 prisoners, with each camp housing 80 to 125 inmates (Goodman 356). The length of stay varies from a year to a maximum of five years (Goodman 361). It is important to note the reason(s) prisoners are sent to fire camps, as well as who they are. The California Department of Corrections makes clear that the nature of this labor is voluntary, which is partially true insofar as the prisoners do indeed volunteer to enter these fire camps. However, the nature of this “voluntary” action is more complicated. It has been argued that prison environments are coercive and toxic, which compel inmates to seek opportu-

nities to escape the prison environment (Stygar 457). Incentives for this labor include the opportunity to spend their sentence outside, receive a 2-day reduction from their sentences for every day spent at the camp, collect two dollars per day, and are told they will participate in “heroic” labor that benefits society at large (Stygar 462).

The demographics of these camps are dominated by African Americans and Latinos, a fact that is consistent with the aggregate racial prison populations in the United States at large and California in particular. “Nearly 60% of the United States’ prisoners are Black or Latino, although these groups comprise less than 30% of the country’s overall population” (Flake 53). In California, “African Americans and Latinos comprise two-thirds of the state’s 160,000 prisoners” (Gilmore 7).

Prisoners in fire camps are non-violent (Stygar 462), trained to the same degree as state employed “CAL FIRE” firefighters, and even receive extensive training beyond that of a civilian firefighter as they receive four hours of advanced training a week (Stygar 464). Beyond training, Goodman notes “each (imprisoned) firefighter [is] trained and certified to combat wildfires” (356). Moreover, while—officially—the camps are functionally equipped to fight wildfires, the inmates tend to a number of labor intensive tasks, including: “trail maintenance, light construction, highway cleanup, [and] forestry work” (Stygar 463). In addition, “a small group of people stay in the camps (‘in-campers’) and work institutional support jobs, such as cooks, janitors, and clerks” (Goodman 356). All of the imprisoned people in fire camps clearly perform labor, but the degree to which their rights as workers are recognized is dependent on a series of exclusions marking prison labor, which I address in the proceeding section.

### **Legal Status of Inmates Within Prisons**

What are the legal differences between state employed firefighters and inmate firefighters? How do we

understand the role of “non-market” labor in the economy within the context of inmate firefighters inhabiting market positions? This is an important question, as the legal status of an “employed person” carries with it a myriad of legal implications, such as equal payment, compensation for injury, protection from exploitation and excessive labor requirements, rights to file legal suits, and so on. Determining the differences between the two will illuminate the treatment of prisoner firefighters as well as provide insight regarding the potential incentives in employing prison labor to fight wildfires as opposed to state employed labor.

The 9th Circuit Court of Appeals is the ruling legal body which asserts federal legal precedence in California, Alaska, Arizona, Guam, Hawaii, Idaho, Montana, Nevada, Northern Mariana Islands, Eastern District of Washington, and the Western District of Washington (What Is The Ninth Circuit?). As such, the 9th circuit determines the precedent for the legal definitions regarding the legal employment status of prisoners performing labor in the California penal system. One landmark legal precedent was set by *Hale v. Arizona I*, and is worth some brief explanation for its legal consequences regarding imprisoned workers in general and inmate firefighters in particular.

*Hale* involved a group of inmates working for the Arizona Correctional Industries (ARCOR) program, who performed labor ranging from raising hogs to creating license plates (Haslam 381). Another inmate group worked under the Inmate-Operated Business Enterprise (IOBE) program, a division of the ARCOR as office managers, and were allowed to run businesses in order to produce goods for the market. All these prisoners were paid wages set below the minimum wage. Both groups sued because they claimed they were owed minimum wage rates, as guaranteed under the Fair Labor Standards Act (FLSA) (Haslam 381). The 9th circuit court then was faced with the question regarding the

employment status of inmates. Initially, “the Ninth Circuit panel effectively held the State of Arizona liable for not paying minimum wages to state prisoners working in the AR-COR program” (Haslam 383). However, an en banc hearing of Hale subsequently reviewed the previous holding, as it was in tension with other legal precedents previously held. Following this hearing, it was determined that:

“The case of inmate labor is different from [the] type of situation where labor is exchanged for wages in a free market. Convicted criminals do not have the right freely to sell their labor and are not protected by the Thirteenth Amendment against involuntary servitude... Correctional industries ... occupy idle prisoners, reduce disciplinary problems, nurture a sense of responsibility, and provide valuable skills and job training” (Haslam 386-7).

Thus, inmate labor in the 9th circuit was not considered protected under the FLSA. The consequences of this decision extend into the reality of imprisoned firefighters, who are denied minimum wage, do not qualify for labor protection, nor have the ability to sue their penal institution if they are injured on the front lines. One imprisoned firefighter connects these unfair conditions to slavery: “But it’s true, this is legalized slavery, and that’s all it is. And, I mean, I’m mad at myself for getting caught in this web, but it is what it is. And if you ever got a chance to walk around, you’ll see how it really is legalized slavery” (Goodman 361). This quotation illuminates the contradiction between the rehabilitative purpose of their sentence and the subjective experience of it. Rehabilitative sentencing, if conducted properly, should provide relief and be of a therapeutic nature. Instead, given the penal conditions, it is experienced as brutal and exploitative.

Generally speaking, Zatz claims that most circuit courts “rely on an ‘exclusive market’ view of employment’s economic character and use it to classify inmate work as noneconomic. They do so because prison labor does not fit a paradigm of discrete, financially motivated market transactions that are independent of any other relationship between the parties” (882). The “exclusive market” view is the dominant philosophy regarding the status of prison labor in its relationship to the market economy. The prisoners who perform labor, whether it is the “housework” of the prison or the production of goods to be sold for the prison do not provide any employment protections against potential violations from prison administrators or their “employer” for lack of a better word. Inmate claims for minimum wage are thereby definitionally rejected insofar as minimum wage implies employment (Zatz 882). The legal justification which ultimately upholds the distinction between contractual and penal labor for this penal practice of inmate labor is twofold. First, prison labor is not contractual and thus not a market relationship insofar as the labor is coerced and involuntary. Despite its coerced nature, it is—legally speaking—not considered enslaved labor, as the 13th amendment outlawed “slavery or involuntary servitude except as a punishment for crime” (Zatz 886, emphasis added). Thus, so long as coerced labor is confined to the penal institution, it cannot be categorized as enslaved. In this instance, the person performing coerced labor is an “involuntary servant” whose labor arises as a consequence of their punishment (Zatz 887). The second condition refers to the exchange aspect of the relationship, or rather lack thereof. Since courts argue that there is no exchange of labor for wages, it is not an economic relationship but rather an educational and rehabilitative one. They argue that the labor performed is a benefit to the inmate as their labor is “job training.” Therefore, the interest of the penal system is benevolent, not a monetary purpose. The “wages” of their labor are considered gifts from the penal system, since their labor was owned by the prison from the outset

(Zatz 889).

The aforementioned judicial justifications are relevant to the context of prisoner firefighters as these legal injunctions describe their treatment and conditions. Since prisoner firefighters are serving a prison sentence, their labor is not categorized as such despite the fact they perform the same labor alongside civilian firefighters who are considered to be employed, and who receive an income, benefits, and protections. As it is stated by the California Department of Corrections and Rehabilitation's (CDCR) operations manual, the camp's purpose is to: "direct and supervise all camp activities so that the camp shall operate for the benefit of the State and the rehabilitation of the inmates" (Goodman 443). This clearly aligns with the dominant carceral philosophy which, no matter how grueling, justifies its activities as rehabilitative and as such, can subject prisoners to life threatening conditions without regard to their safety. As Stygar states: "If injured or killed in the line of duty, they are not covered by worker's compensation. California law severely restricts access to disability benefits for prisoners; injured inmates must rely on the limited protections offered by California Labor Code section 3370.1" (462).

The sentiment that prisoners ought to be engaging in "rehabilitative" labor, as well as the notion that said labor is deserving insofar as it is considered an acknowledgment of the social wrongdoing they have committed to the social body, is often a justification that functions as moral scaffolding to uphold these practices. The outlined exclusions these prisoners experience on the front lines of wildfires highlight that prisoner death is considered negligent in the eyes of California state, a reality which demands that the actual function of prison labor and incarceration be re-examined. Moreover, beyond imprisoned firefighters, there can be no doubt a countless number of other prisoners forced to perform various kinds of labor experience the same degree of exploitation and disposability given the underlying motivations—minimized labor costs—exist in all other



economic contexts in which prison labor is deployed.

Following their sentencing, prisoners face a myriad of consequences which extend into their civilian life. These barriers create the conditions which induce crime to be re-committed, and thus creates a recursive cycle of reincarceration. This next section will explore the ways in which prisoners face difficult re-entering society through both legal and psycho-social factors.

## **Recidivism**

California has the highest rate of recidivism in the United States, defined as the tendency to return to crime following release, at a rate of 57% (Pew Charitable). In conjunction with the fact that in California, “62 percent of the inmates released in fiscal year 2017–18 who had been assessed as having rehabilitative needs and having a risk of recidivating were released without any of these needs having been met” (Stygar 472), it is abundantly clear that incarceration yields destructive consequences insofar as the majority of those who enter the prison system re-enter again in the future, and in most cases incarceration increases the likelihood of re-entry. Why is this the case? I argue that it is because of pervasive employer/employment discrimination faced by formerly incarcerated people in general, and firefighters specifically.

Upon release from the fire camps, inmates typically only have accumulated a few hundred dollars during their sentence. This makes it difficult to secure housing and other necessary payments in order to secure employment. For inmates who leave fire camps, there is difficulty applying the skills and experience obtained there. Applicants with a criminal record seeking a position within a firefighting department are rejected, as only qualified applicants are taken into consideration, all of whom carry EMT certifications. Those without EMT certifications are dismissed. The peculiarity lies in the fact that holding a criminal history is the reason many ex-con-

victs, upon release from the fire camps, are denied opportunities to gain EMT certifications (Stygar 475-6)—prisoners who were allegedly “qualified” to perform firefighting labor are no longer considered as such when entering civilian life.

In response to the growing public criticism of barring imprisoned firefighters from seeking work in this field upon exiting prison, in addition to the unprecedented time in which wildfires were rampant, California Governor Gavin Newsom signed legislation in 2020 which allows formerly incarcerated firefighters to plead to a judge if they wish to remove their criminal history (Thomson). The legislation states that a judge may or may not allow their record to be expunged. While many cite this as an attempt to remove the discriminatory barriers prisoners face upon release, it is clear that the effort to do so was motivated by the increase in wildfires as well as the lack of trained firefighter labor due to the COVID-19 pandemic. This is important to note as understanding the motivations of this legislation will illuminate the extent to which this bill will allow recidivism at large to be combated.

This bill solely grants an expunged criminal record if incarcerated peoples have performed firefighting labor, excluding all other professions. Those seeking an expunged record to obtain a teacher’s license, for example, will be denied. This legislative mechanism affirms that California is not interested in combating discrimination against ex-prisoners as it is in maintaining the supply of bodies able to fight the growing wildfires without extensive labor costs. Only after fulfilling a prison sentence are former inmates able to appeal to remove it from their record. This gesture blatantly acknowledges the arbitrary nature of the crime committed given it can be expunged upon release. As Governor Newsom states, the measure will “give those prisoners hope of actually getting a job in the profession that they’ve been trained” (Thomson). Newsom thus only grants a select few

of the wrongfully convicted prisoners economic and moral redemption, rather than expunge the records of all peoples wrongfully convicted who, perhaps, could not pass the physical requirements needed to fight fires in a penal context. Only when demand is dire, and only when the California state is forced to reconsider its policy of arbitrarily imprisoning its inhabitants, are ex-prisoners allowed to expunge their unjustly given criminal record. Despite that fire camps seek to “rehabilitate” inmates by providing valuable skills, which allegedly will foster their transition toward a functioning member of society, this does not seem to apply, legally speaking, to their social acceptance upon their release unless a pandemic limits the state’s ability to send prisoners to the front lines. Further, the fact that being “qualified” for a skilled position did not apply to these men and women when they were serving their sentence for a few dollars a day, but do apply when they are seeking well-paid, meaningful employment in a state which is increasingly dependent upon firefighters to extinguish rampant wildfires illuminates California state’s underlying motivation in ensuring a steady supply of prison labor to utilize.

Following release from prison, there are a number of “collateral consequences” imposed onto the livelihoods of ex-convicted peoples, which Nettles defines as the “federal and state civil laws and regulations that restrict the activities of people with a prior criminal conviction,” and which apply to 70 million Americans— all of whom have some form of criminal record (293). This ranges from housing, employment, voting, public benefits, and immigration— with some estimates that the number of legal restrictions reaches 50,000 (Nettles 293). Murphy shows that the far reaching nature of collateral consequence is also made possible insofar as:

“Most criminal records [are] obtained from the Internet—even the basic contents of a National Crime

Information Center official criminal history check—will typically note only the following elements: arrest; whether or not the charges are dismissed; the outcome (guilty or not guilty); and if a sentence is imposed, the length of the term of probation or imprisonment and any restitution ordered by the court” (Murphy 3).

This results in a permanent “branding” which allows employers and landlords to access a person’s incarceration history, and deny either employment or housing as a result. This discrimination is confirmed by studies conducted to test in the field whether employment discrimination takes place such as Holzer’s, in which 3,000 employers in four metropolitan areas were surveyed via testimonial. Employers were asked regarding the likelihood they would hire a person with a criminal record. Over 60% answered “probably not” or “definitely not,” with only 38% answered that they definitely or probably would consider someone with a criminal history (Holzer 7-8). From simple testimony, the majority of employers will dismiss applicants with any form of criminal record.

Beyond testimonial based results, some studies have conducted field experiments which confirm this bias, initiating surveys which did not explicitly inform its participants that the researchers were testing employment bias. Pager et al. conducted one experiment by “send[ing] matched teams of testers to apply for 340 real entry-level jobs throughout New York City over nine months in 2004.” The teams were composed of men who were identical in terms of educational attainment and comparable qualities of high school, work experience (quantity and kind), and neighborhood of residence (Pager 781). However, the sole difference among them was racial. Further, “the testers were instructed to reveal, when asked, that they had recently been released from prison after

serving 18 months for a drug felony (possession with intent to distribute, cocaine)... the White tester's criminal record was also signaled on the résumé by listing work experience at a state prison and by listing a parole officer as a reference" (Pager et al. 782).

The study concluded that possessing a criminal record disadvantaged applicants approximately the same degree a minority status disadvantages an applicant. This suggests that Black people with a criminal record will be subject to "discrimination squeeze," defined as the combination of racial and criminal discrimination. Thus, online access to criminal records poses a large hindrance to ex-convicts trying to find work upon re-entry as 60% of employers would already form a bias against them prior to the application bias, with employers exercising these biases upon applicants at discriminatory rates. Given that the majority of prisoner firefighters are racial minorities as noted in Section I, as well as the fact that only those whose criminal records will be expunged are those California state allows during the COVID-19 pandemic: discrimination will still be an active force for the majority of these ex-convicts. The notion that incarceration is a moral transaction following a perceived social wrongdoing thus cannot be farther than the reality of prisoners upon release. A transaction implies an equal or fair exchange, and in this context clearly does not conform to anything resembling an equal and fair exchange as nonviolent "wrongdoing" results in perpetual moral shame and a permanently crippled socio-economic status. From the egregious outcomes of recidivism, the nature of crime is sociologically coerced, resembling architectural planning, and is induced from the need for a reliable stream of bodies to displace and dispose of— not an individual's moral failing.

## **V: The California Carceral “Ecosystem”**

The aforementioned analysis gives insight regarding the systems and mechanisms by which California inmate firefighters are incarcerated, utilized as labor, released, and put back into the carceral orbit. First, as noted in Section I the rates of incarceration have historically been rising as a result of the criminalization of drugs. This has disproportionately targeted minorities, particularly Latinos, in an attempt to recover a perceived loss on the racial/sociological hierarchy. Thus, people of color are the main constitutive peoples who inhabit prisons at increasing rates, which creates the demand for the expansion of prison infrastructure insofar as an increase of criminalization is an alleged signal that crime is increasing. This creates abundant prison populations from which labor can be performed at a significantly cheaper cost. In the case of firefighters, California state has explicitly admitted the benefits to taxpayers of using prison labor for service (Goodman 354). In fact, the use of prison labor for firefighting as well as a myriad of other tasks conducted within the fire camps have saved California an estimated eighty million dollars annually (Goodman). The reliance of prison labor for these services is clear, as prisoners conduct nearly 40% of firefighting services (Stygar), which will likely only increase as the frequency of wildfires are increasing every decade.

The carceral “ecosystem” for these firefighters functions as follows: during their sentence within the fire camp, certification, training, and vast experience is accumulated which is often cited as a justification for the use of prison labor insofar as it is “rehabilitative.” California state exploits this labor as an opportunity to minimize the labor costs typically owed to civilian firefighters, and thus have no incentive to decrease the rate of incarceration as it supplies the bodies necessary for firefighting. Following their release, with only a few hundred to a few thousand dollars accumulated (depending on the length of their sentence), prisoners are sent into society and expected to integrate

into the labor market. However, ex-prisoners face discrimination and are barred from jobs due to a lack of an EMT certification, as well as outright discrimination due to criminal history and race. Formerly incarcerated job applicants will be dismissed, as EMT certifications are necessary for a state-employed job with CAL FIRE, yet obtaining an EMT certification can be impossible insofar as having a criminal record disqualifies those that apply for one. Despite Governor Newsom's bill to allow a marginal number of prisoners with firefighting experience to have their criminal records expunged, it is abundantly clear from its selective and limited nature that only under circumstances which demand the supply of bodies to fight fires, and which lack prison labor to perform it, will California acknowledge the unjust nature of their imposed sentence. This bill does not address the systemic issue which gives rise to abundant prison populations, despite acknowledging the recidivism it causes.

In spite of having extensive experience, certification, and training, ex-prisoners are systematically denied access to jobs for which they were qualified during their prison sentences. These prisoners are vulnerable to higher rates of recidivism insofar as lack of employment and education deprive prisoners the social capital necessary to obtain a high paying job, assuming they can obtain one at all, in light of the aforementioned rates of ex-prisoner discrimination. Given that 55% of prisoners do not have a high school diploma in California (Gilmore 111), the "qualifications" of the majority of ex-prisoners attempting to re-enter society are not enough to readily secure employment or a decent living. These forces create the conditions for prisoners to engage in "crime" because economic opportunities are denied to them, which produces and reproduces the presence of crime. Each instance of re-incarceration increases the likelihood of re-entry into prison given they are repeat offenders, and three offences guarantee a life sentence.

The legal and carceral mechanisms which perpetuate this system are an "ecosystem" in the sense that every

force and mechanism serves the greater carceral macrocosm insofar as it creates its own demand as well as its own reproduction. In its wake lies a trail of destroyed human livelihood and life.

## **Conclusion**

Angela Davis once argued that “prisons do not disappear social problems, they disappear human beings.” It is in this context that the author hopes to raise awareness of the multidimensional and dynamic system in which this specific case, prisoner firefighting, is but a single instantiation. There are exploited prisoners in a myriad of other industries and professions, each with its own unique form of exploitation and political justifications. The legal mechanisms, such as the criminalization of drugs like marijuana, the “three strikes” law, and the district court rulings such as Hale are institutionalized forms of discrimination that produce a systemic problem. Calls for reform may mitigate surface level indecencies, such as the calls for better living conditions in prisons. However, reforms do not question the existence of prisons in the first place, nor does it question the nature of crime, or whether the label of criminal is warranted. The author does not offer a program in the form of speculative legislation or policy, considering this issue is systematic in nature, and cannot be addressed with mere legislation. Instead, the author implores the reader to critically examine the notion of whether prisons and the broader instruments of the state which serve them, truly correct social wrongdoing. In a word, before action can be taken, we must deeply consider the core of our social ills and develop new imaginings to combat them.



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A New Model of Anxiety: Proposal and Outline of a  
C. elegans Behavioral Study  
*Cristabella Fortna*

**Abstract**

As one of the most common afflictions to mankind<sup>1</sup>, anxiety is a crippling and potentially life-threatening psychological disorder whose causes, manifestations, and mechanisms are widely varied and seldom concrete. Though there exists a plethora of available treatments and therapies, the process of managing anxiety is one of trial and error. In order to gain more definitive insight into the neurological mechanisms of anxiety, this paper proposes a new model to more deeply study anxiety as a whole, perhaps to yield a better neurological and biophysical understanding of this disorder.

## Introduction

Contrary to the common belief that anxiety was first diagnosed and treated in the 1950's, evidence dates documentation of anxious afflictions to the findings of Cicero and Hippocrates in 43 BC and 370 AD respectively<sup>2</sup>. Hippocrates first documents this *πάθος*, (pathos) or sickness, in his disciple Nicanor who became slave to “masses of terror” which persisted over long periods of time<sup>2</sup>. Similarly, Cicero writes in his book *Tuscan Disputations* where he explicitly qualifies anxiety and worry as disorders, or *aegritudo* in Latin. Listed in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V)<sup>3</sup>, a documentation of all current psycho-afflictions, anxiety is the anticipation of future threat. As most Romantic languages have differentiated “anxiety” from “worry,” like the French *anxiété* as compared to *souci*<sup>2</sup>, anxiety explicitly differs from fear or worry; fear is a response to an immediate or current threat, whereas anxiety produces a prolonged fear-response in the absence of imminent danger.

Anxiety is thought to be a manifestation of a loss, malfunction, of total lack of the neurotransmitter serotonin (5-HT)<sup>4-9</sup> of which there are 14 receptor subtypes<sup>5</sup>. 5-HT has been known to control numerous human behaviors<sup>4-6</sup> such as sleep, mood, appetite, emotional decision-making, cardiac function, memory, learning, gastrointestinal motility, and biological rhythms among perhaps many more.

Anxiety is among the most common mental illnesses<sup>1</sup> and thus affects a large portion of the world's population. Mental disorders are often underdiagnosed<sup>1</sup> or dismissed by medical professionals entirely, and when successfully diagnosed, treatments are largely ineffective<sup>1</sup>. Furthermore, medications used to combat mood disorders are easily misused, both by professionals and recipients, which may lead to worsening of symptoms<sup>10</sup>. This paper compiles previous data to showcase the need for a better model of anxiety. More specifically, this research (1) presents information detailing the functions and effects of 5-HT in relation to

anxious disorders; (2) displays current information on available treatments and their shortcomings; (3) analyzes previous models of anxiety, namely rats, to (4) suggest a more useful model to therefore more definitively study anxiety.

### **Serotonin in Anxiety**

Anxiety is currently thought to be related to some form of error in the neurotransmitter serotonin (5-HT)<sup>4-9</sup>. This error, however, may be caused through a variety of errors through the paracrine function of serotonin as malfunctions may occur in production, transportation, malfunction, genetic transcription, or a decrease in levels of 5-HT in the brain. Though 5-HT controls much of human function<sup>4-6</sup> as previously mentioned, there are very few synaptic connections in the brain due to the paracrine nature of 5-HT transport throughout the body. Furthermore, out of the  $10^{11}$  neurons in the brain, only  $2.5 \times 10^5$  neurons produce or transport 5-HT; this is to say that only 0.00025% of neurons in the brain control the majority of human function.

5-HT levels in the brain are very strictly controlled out of necessity; too little functional 5-HT in synaptic clefts and a patient becomes depressed and anxious, but if there is too much 5-HT circulating through the brain the subject manifests behaviors of psycho- or sociopathy due to the effects of Serotonin Syndrome. This strict regulation of 5-HT production is carefully maintained during waking hours but drops to almost no function when a subject achieves the REM stages of sleep<sup>6</sup>. In other words, the cerebral balance of 5-HT is strictly controlled in part by synaptic electrical stimulus<sup>6</sup>, whether through excitation or perceived threat. When this regulation of 5-HT becomes too strict or malfunctioning, it has been shown to increase the adverse effects of anxiety, triggered by perceived threat and electrical stimulus, compared to those effects of real, immediate threat<sup>11</sup>.

The perceived threat from the trigger is translated to electrical signals in the brain which direct the synapses to produce a large quantity of 5-HT to regulate the new mood and behavior

which has just been induced. However, one of the 14 5-HT receptor subtypes<sup>5</sup>, 5-HT<sub>1A</sub>, is subsequently produced as stimulated by the mass-overproduction of 5-HT. 5-HT<sub>1A</sub> functions as a 5-HT “safety valve” by blocking the ability of the pre-synaptic 5-HT to enter the synaptic cleft. Effectively, though the body has produced large quantities of 5-HT in response to electrical stimulus, 5-HT<sub>1A</sub> reduces the concentration of post-synaptic, and therefore functional, 5-HT within synaptic clefts. It is this over-regulation of 5-HT levels via overstimulation by stress which produces anxious behaviors in patients.

An all-too-common example of a perceived threat is ingrained into the educational system as we know it: test anxiety. In a study by Maes et al<sup>11</sup>, which analyzed blood and urine samples of 38 university students, the levels of anxiety were quantified by peripheral immune responses of Interferon gamma (IFN- $\gamma$ ), Tumor Necrosis Factor gamma (TNF-  $\gamma$ ), and Interleukin-1 Receptor Antagonist (IL-1Ra), all of which have been linked to a defense response in the body. Figure 1 presents an adaptation of the results of Maes’ study and displays the change of the aforementioned indicators before (PRE), the day of (STRESS), and after (POST) a difficult exam which these university students all took on the same day. All 38 students were surveyed before the exam to gather baseline anxieties of each subject; those who ranked higher in initial, supposedly independent, anxiety pre-screening are tracked (solid lines) against those who presented a normal amount, or no, measurable anxiety during this screening process (dashed lines).

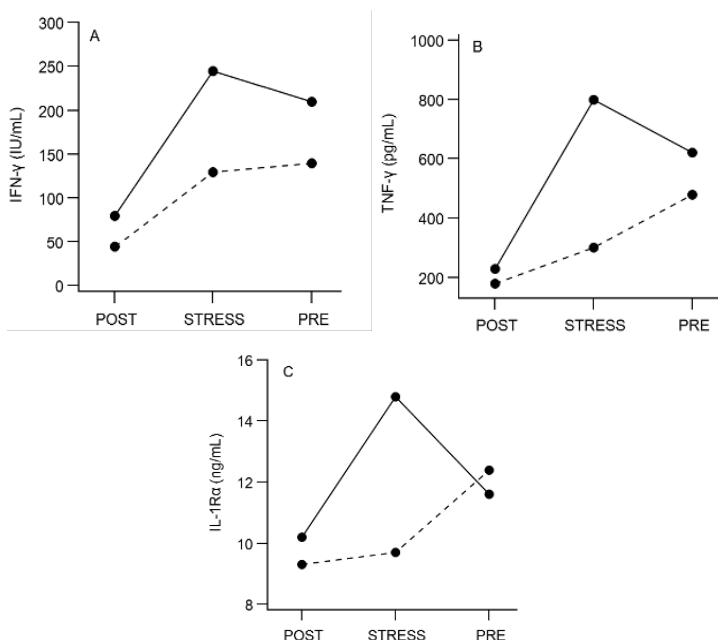


Fig 1. is an original recreation adapted from **Maes M, Song C, Lin A, De Jongh R, Van Gastel A, Kenis G, Bosmans E, De Meester I, Benoy I, Neels H and others.** The effects of psychological stress on humans: increased production of pro-inflammatory cytokines and a Th1-like response in stress-induced anxiety. *Cytokine* 1998;10(4):313-318. The solid lines indicate the quantity of respective peripheral immuno-indicator of students whose anxiety ranked high PRE-exam. Dashed data indicates that of students who has been qualified with low anxiety PRE-exam. Overall, the perceived threat of failing the exam during the process of completing said exam, is what induced severe, long-lasting anxiety in all students—regardless of pre-screen results—as demonstrated by the prolonged increase in anxiety-linked immuno-indicators well after the test date.

Despite varying levels of pre-exam stress, Maes' data show that these biometrics increase in all students due to the action of taking the exam. Even in students whose anxiety has ranked quite high pre-exam, there is an overall increase in anxiety-linked biomarkers between PRE and POST events. However, the decrease in periphery anxiety indicators, the difference be-

tween STRESS and POST suggests that their anxiety arose from the perceived threat of having to take this exam at all; finished and done, their anxiety begins to decrease independently of their grade as indicated by the decrease in all three anxious indicators monitored here. This trend is not paralleled in those students who exhibited low pre-screening results as their anxiety is shown to continually increase even after the exam was completed, which was previously suggested as not impacting their anxiety during PRE data collection. For these low-anxiety students, upon walking out of the exam room, the perceived, lingering, threat of failure continued to raise their peripheral immune-defense response up to a month afterward. Though the effect of test anxiety was somewhat varied between low-anxiety and high-anxiety students, Maes et al saw a significant overall increase of defense- and anxiety-related biometrics in every subject simply due to the necessity of taking the exam at all.

## Treatments

In addition to Cognitive Behavioral Therapy (CBT), the most commonly used treatment for clinical anxiety is prescription medications. Of these available treatments, 5-HT Reuptake Inhibitors (SSRIs) and 5-HT-norepinephrine Reuptake Inhibitors (SNRIs) are the most widely employed<sup>5</sup> to treat mood disorders.

SSRIs and SNRIs employ the body's own 5-HT regulation in order to reduce the post-synaptic 5-HT from getting absorbed by the brain, which would effectively lower the amount of 5-HT in the post-synaptic cleft. Anxiety medications do not add 5-HT to the body, as increasing the concentration of this hormone beyond normal levels produces symptoms of Serotonin Syndrome. However, both varieties of 5-HT reuptake inhibitors slow and reduce the rate of absorption of 5-HT to effectively maintain, rather than directly increase, levels of post-synaptic 5-HT.

The natural process by which the brain instigates anxious behaviors is via the 5-HT "safety valve" subtype known as 5-HT<sub>1A</sub><sup>6, 8</sup>. When enough electrical stimulation, or stress, is pres-



ent, the brain mass produces pre-synaptic, or not-yet-released, 5-HT at once. Due to the unnecessary influx of 5-HT, 5-HT<sub>1A</sub> is subsequently produced as a means to prevent the 5-HT from entering the synaptic cleft and becoming post-synaptic. But, as the body has just produced an abundance of “safety valve” 5-HT, little to none of the 5-HT which should have been released becomes post-synaptic, effectively ensuring low levels of 5-HT in the brain and thus the patient becomes anxious or depressed. To mediate the after-effects of this process—as these medications do not prevent the production nor usage of 5-HT<sub>1A</sub>—SSRIs and SNRIs slow the rate of absorption, or reuptake, of post-synaptic 5-HT to ensure that whatever quantity of 5-HT the subject has been able to produce naturally remains in the synaptic cleft for a longer period of time. More specifically, the method by which SSRIs and SNRIs increase post-synaptic, or usable, 5-HT levels is by preventing the reabsorption and therefore effective loss of 5-HT within the synaptic cleft rather than directly adding 5-HT in the form of prescription medication.

Another common form of treatment is the prescription use of benzodiazepines, a term which encompasses over twenty different medications such as Xanax, Valium, and Klonopin. Benzodiazepines are widely prescribed to combat several medical afflictions like epilepsy, psychoses, and mood disorders like anxiety and depression<sup>12</sup>. In earlier days, benzodiazepines were the first-choice medications of practicing clinicians<sup>12</sup>, but their use has since declined due to their extremely addictive quality. Furthermore, more recent studies find no sound evidence to support the efficacy of such prescription against disorders like anxiety and suicidal ideation<sup>10</sup>. Such studies have even found that patients suffering from such psychiatric disorders are more susceptible to the harmful side-effects of these drugs, leading to severe worsening of the very conditions these benzodiazepines were initially prescribed to treat. However, benzodiazepines of all varieties are still widely prescribed today and continue to be misused and abused by both clinicians and patients<sup>2</sup> which con-

firms, and perpetuates, the misunderstanding of anxiety on the whole.

Unfortunately, despite the abundant variety of available medications, anti-anxiety drugs have repeatedly been shown as an ineffective treatment overall<sup>6-10</sup>. Less than 50% of patients using prescription medications, regardless of the subtype of anti-psychotic medication, show any improvement; of these few, less than 30% reach full remission with no relapse<sup>6-9</sup>. While these data may superficially display mere lackluster statistics, to those who suffer from these conditions, as well as those who struggle to get diagnosed and therefore cannot be considered in these calculations, these reports emphasize the abysmal care for patients and the overwhelming quantity of human lives that have been destroyed, lost, and remain misrepresented in studies of anxious and depressive behavior. The underwhelming success rates of all anxious treatments and psychotherapies supports a general misunderstanding of the disorders they treat and leads to the necessity of a better model of anxiety through which to refine drug mechanisms and a new understanding of anxiety.

## **Previous Models**

One of the most common models for behavioral studies are rats and mice. One of the reasons why a rat, specifically, proves more useful than a mouse is due to the size of the rat model<sup>13</sup>. The noticeable increase in model size, respective to that of a mouse, provides greater quantities of available sampling such as tissues and fluids. In addition, specifically relating to behavioral studies, rats are generally more social<sup>13</sup> than mice, facilitating the induction of behavioral changes relating to social interactions. In other words, rats provide a useful model for anxiety as they respond to social changes more easily than mice. Furthermore, mice and rats can learn<sup>13</sup>, which is an essential ability in studying learned behaviors or widely varied genetic causes of any behavior of interest. Learning experiments test the intellectual limits of the rat and find that these rodents can complete mazes and ex-

hibit learned behaviors, essential for modeling neurological and behavioral studies.

Although small rodents provide a good replication of mammalian function, when studying psychological disorders, they may not prove as useful as previously believed. Though rats are easily controlled and manipulated throughout the process of experimentation, these studies heavily rely on viable biomarkers to gather data beyond qualitative behavioral analysis. Biomarkers include any sample which one can extract from the model system<sup>11, 14-18</sup> such as urine, blood, saliva, and various other bodily fluids. Many studies using rat models related the changes in peripheral cytokines<sup>11, 15-17</sup>, T-cells<sup>11, 16</sup>, and interleukin proteins<sup>17, 18</sup>, all of which are relevant for inflammatory responses in the model's nervous system, and to changes to anxiety.

A specific branch of study using smaller biomarkers to quantify change is known as Metabolomics, a branch of biometric study which analyzes samples of small compounds like lipids, vitamins, amino and organic acids known as metabolites<sup>14, 15</sup>. Measurements of metabolites are useful to analyze changes in the body due to the introduction of therapeutic responses like medication<sup>14, 15</sup>. Because these molecules are produced in the natural metabolizing process, they can easily be sampled to indicate the effects of new medication on the model. Although these methods can be employed for sampling the model pre- and post-observation, these data do not answer how the body changes during the experimental process. Unfortunately, the use of models and biological sampling can only confirm whether or not the model exhibits the anticipated behavior rather than providing any insight into the mechanistic changes of these new behaviors, highlighting the necessity for a newer, better, anxiety model.

Following a tangential investigation carried out by Munshi et al<sup>16</sup>, rats can become anxious when introduced to Repeated Social Defeat Stress (RSDS). Detailed in Munshi's experiment, when rats are repeatedly introduced to the cage of a larger, more aggressive, dominant species of rat, the subjects expose their ab-

domen in social defeat. These rats which were subject to RSDS over several days produced prolonged anxious behaviors in rats even when the RSDS testing had been completed and these rats were returned to their own cages.

Numerous repetitions of this social defeat led to stress, and the subsequent anxious behaviors of the rats were monitored by their performance in various control tests such as an Open-Field Test and a Forced Swim Test. In an Open-Field test, the subject rat is allowed to wander about a clean enclosure while its movements and tendencies are tracked. A Forced Swim test compares the rats' ability to swim to safety after exposure to unnecessary stress. These test results are compared to those of the subject rats before RSDS exposure and to that of control rodents in order to definitively determine the anxious state of the test subjects. After repeated exposure to RSDS, subject rats failed both an Open-Field and Raised Maze test as the rat no longer ventured through the testing areas post-exposure. Anxious rats lingered around the edges of an open-field cage and failed to find their way out of—or into, in some cases—the maze entirely. However, the RSDS subjected rats still passed a Forced Swim Test, indicating that their motor function was not impaired, and the rats remained physically unharmed from the RSDS testing. These metrics and behaviors outlined in Munshi's study indicate various behaviors and quantifiable metrics which can be used and replicated in other experiments which investigate anxiety and its numerous effects.

However, as useful as rats seem to be, given they have laid the groundwork for most behavioral studies, there are limitations with this model. Rat behaviors cannot be defined numerically nor does this study investigate, or even have the ability to, analyze the neurological mechanism by which these rats have become anxious; the specific knowledge of which might prove most essential in the treatment of mood disorders. Once again, rat-based anxious models can only confirm the manifestation of anxious behavior due to stress and cannot provide any insight

beyond the outward expression of anxiety in rats. It is with these limitations in mind that this paper indicates, and proposes, the need for a new anxiety model in order to better understand and treat anxiety.

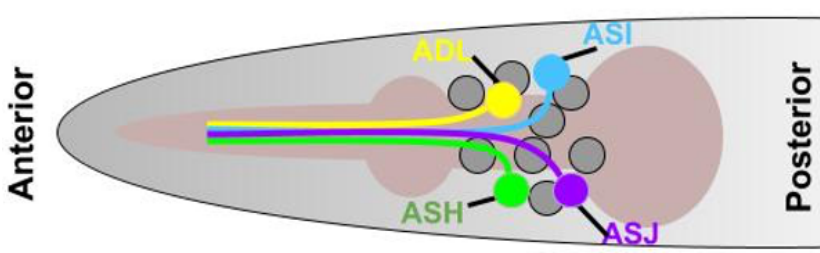
### **New Models to Find New Treatment**

*Caenorhabditis elegans* (*C. elegans*) are a species of nematode which grow to 1mm in length. These transparent and microscopic worms represent a very interesting model in drug discovery as well as molecular and cell biology<sup>19</sup> due to the literal and figurative transparency of this worm; the inner workings of these worms can be followed and monitored to levels as small as the chromosomes of their cells during meiosis and fertilization<sup>19</sup> through the use of fluorescence under microscopic scrutiny. Every aspect of these worms has been studied and recorded largely due to the foundation-laying contribution of Nigon, a French scientist, in the mid-20<sup>th</sup> century<sup>19</sup>. Many neurological investigations into afflictions such Parkinson's and Alzheimer's Disease(s) and Autism Spectrum Disorder (ASD) have also employed the use of *C. elegans* as their primary model because the worms' complete neural map is understood, and the underlying biochemistry of the worm is very similar to that of humans<sup>20</sup>. In addition to the multitude of applications *C. elegans* provides as an experimental model, these free-living hermaphrodites can be continuously cultured throughout the duration of any experiment despite their week-long life cycle to continue subject proliferation without causing delay or other hindrances to the experiment itself.

Unlike experimentation with models such as rats and mice, which rely on the use of various metabolomic measurements<sup>14</sup> to indicate any quantifiable changes, employing *C. elegans* as models almost entirely bypasses the need to collect biomarkers as the innerworkings of the worm are visible. This provides entirely new ground upon which to study pathways by which an organism, as a whole and on the neurological level, behaves.

Though not as widely studied, there are a range of *C. elegans*' functions and behaviors which are directly regulated by 5-HT<sup>21-25</sup>. Of the most easily quantifiable, *C. elegans* oviposition is directly affected by 5-HT regulation<sup>23, 24</sup>; when threatened or antagonized, *C. elegans* reduce or halt oviposition as part of their defense response. In addition to egg-laying, *C. elegans* motor function<sup>24, 25</sup> is also regulated by 5-HT in their body. Furthermore, *C. elegans* adapt to their environments akin to the learning ability of rats. In tandem, these behaviors and abilities suggest the possibility to induce anxiety in, and quantify behaviors of, *C. elegans* in an experimental setting much like that of Liu et al.

Liu et al investigate the defense response of *C. elegans* when introduced to the pheromone, or adequate substitute, of their natural predator *Pristionchus pacificus* (*P. pacificus*). Figure 2 identifies four pairs of olfactory, or scent-related, neurons in *C. elegans* which are responsible for the defense response of the worm.



Chute CD, Pribadi AK, Leinwand SG, Tong A, Curran KP, Bose N, Schroeder FC, Srinivasan J and others. Predator-secreted sulfolipids induce defensive responses in *C. elegans*. *Nature Communications* 2018;9(1):1128. This diagram indicates the four pairs of olfactory neurons responsible for the defense response in *C. elegans*.

When placed into a culture which had been saturated with a *P. pacificus* pheromone-substitute, the *C. elegans* exhibited a defense response despite the absence of their natural predator

from the testing area. Figure 3 outlines what constitutes a defense response in *C. elegans* and identifies which of the four pairs of olfactory neurons, presented in Fig. 2, are responsible for these behaviors. The blue gradient represents the pheromone excreted by *P. pacificus*, the presence of which initiates the defense response in *C. elegans*.

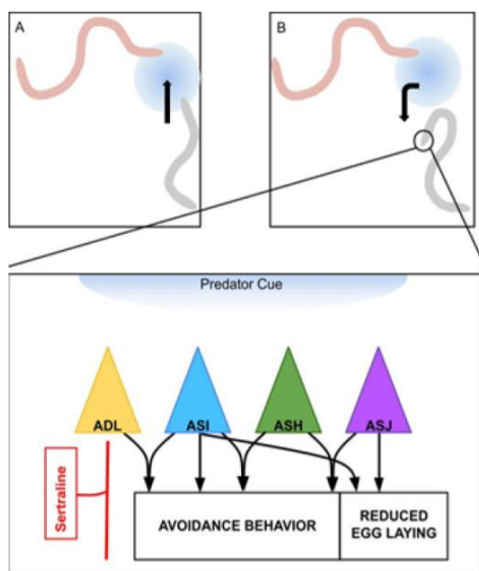


Fig 3 is an original document adapted from **Liu Z, Kariya MJ, Chute CD, Pribadi AK, Leinwand SG, Tong A, Curran KP, Bose N, Schroeder FC, Srinivasan J and others. Predator-secreted sulfolipids induce defensive responses in *C. elegans*. *Nature Communications* 2018;9(1):1128.** This diagram indicates the neurons which produce behaviors indicative of a defense response in *C. elegans* such as reduced oviposition and avoidance behaviors, monitored by altered body-bend counts. The presence of sertraline blocks these behaviors and therefore completely counteracts the fear response of subject worms.

This study confirmed that *C. elegans* produce a defense response controlled by 5-HT as the tested worms were then effectively given treatment with sertraline (Zoloft), a common SSRI. Introducing Zoloft into the worms' culture promptly reduced the

defense response in anxious *C. elegans*. The effect of Zolof on the worms indicates that these defense responses are dictated, at least in part, by *C. elegans*' 5-HT levels which loosely extends the concept of defense response to anxious behaviors. However, this study only confirmed then rectified the immediate fear response of *C. elegans* regulated by olfactory neurons presented in Fig. 2. As mentioned above, fear is not equated with anxiety as anxious behaviors last over a long period of time in the absence of a trigger<sup>2,3</sup>. To appropriately demonstrate that *C. elegans* have become anxious, and then subsequently demonstrate a method which reduces these anxious behaviors, a different experimental set up should be employed.

## Discussion

Though the work of Liu et al is indicative of an anxious response in *C. elegans*, perhaps a better experimental set-up might analyze the behaviors of *C. elegans* after repeated exposure to a sulfolipid *P. pacificus* substitute over a few days' time, mimicking RSDS implemented in Munshi's study of rats. Switching the subject from a rat to these nematodes and modifying the procedure may lead to a better model of anxious disorders to then improve the creation and prescription of medications.

To confirm that the subject *C. elegans* are, in fact, anxious after the *C. elegans*-specific RSDS exposure, modified and more appropriately quantifiable tests can be done in accordance with the rodent-based Open Field test. When placed in a bacteria-rich environment, the exact pathway and number of body-bends of the worm can be counted and compared to that of a control in a more precise manner than the video-playback employed by Munshi et al<sup>16</sup>. This discrete quantification of external behavior effectively mimics similar data from the Open Field test, as body bends can be quantified and put into context of a small grid overlaid onto the dish to calculate and compare the exact area traveled by control and anxious *C. elegans*. This set-up may prove more precise when studying and measuring anxious behaviors as such data can



be more concretely quantified than that of rats.

With an abundance of now-anxious worms, one could then investigate the changes in 5-HT fluorescence in the nematode itself to gain further insight into the neurological connections by which this anxiety is produced. This function will prove extremely useful, as synaptic connections in *C. elegans* are known, mapped, and clearly visible unlike the rat model which previously propelled behavioral studies. Anxious worms could be placed in various medication-saturated plates to visually track the improvement—or harm—of such treatments on these anxious subjects. Perhaps this would lead to a much more concrete understanding of anxiety to hopefully lead to more effective medical treatments.

The largest obstacle to overcome in experimental design is the lifespan of these nematodes. The learning abilities, human-analogous hormones and receptors, and most notably the literal and figurative transparency of measurements done on *C. elegans* may prove extremely useful. However, experimentation must be confined to less than one week to study the response of *C. elegans*. Behavioral experimentation and studies should ideally be conducted over longer periods of time to appropriately observe initial and prolonged responses, most notably to significantly differentiate an anxious response from that of an immediate fear response.

This proposed model has not yet been tested in a laboratory setting, but due to the information presented by rat<sup>16</sup> and nematode studies<sup>24</sup> there is sufficient evidence to support the hypothesized efficacy of such an experiment. Such data would provide quantifiable behavioral changes of anxious worms, visual evidence of a 5-HT synaptic path to then be investigated in humans, and subsequent equally quantifiable behavioral changes when worms are introduced to different types of anxiety medications. This information should improve the current general understanding of anxiety as an affliction and will hopefully propel further studies to improve diagnostic and treatment success.

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“To jabber in your own language”: Postcolonial  
Implications of Language and Translation in Aimé  
Césaire’s *A Tempest*  
*Tessa Bagby*

**Abstract**

This paper examines the neo- and postcolonial implications of reading and performing Aimé Césaire’s *A Tempest*, arguing that the play’s acknowledgment and then disruption of racial identifiers - rooted in language both in its original text and its translation - seeks to irreparably challenge the complicity of white neocolonial audiences in their own personal contexts. Relying on a semantic framework drawn from Albert Memmi’s definitions of the colonial, the colonialist, and the colonized, the author explores how language acts as a site for ideological colonization and resistance within the play by virtue of its adaptation of its canonical source text and the acknowledgment and subversion of a Eurocentric universality. A closer examination of the act of translation to English makes a case for the play’s unique position as postcolonial in its desire to explicate the harm of colonialism to a colonialist audience, emphasizing the importance of choices made in translation and performance for effective understanding and presentation of the text’s neocolonial themes. This paper concludes by reaffirming the necessity of discomfort and multifaceted ideological conflict as agents for motivating recognition and structural change in colonial audiences.

Reinterpretation of artistic forms and translation of ideas are inherent to theatre as an art form. Cultural shifts and historic events inform the way plays are written, and in turn, the plays not only influence future generations of playwrights in their themes and structures but also have the capacity to provoke and educate audiences on the cultural contexts that informed their creation. Aimé Césaire, a Martiniquais who lived and wrote under French (neo)-colonial rule, drew from his position in history for his reworking of Shakespeare's *The Tempest*, explicitly inscribing the action of the canonical text in terms of the struggle between colonized indigenous slaves and a colonizing European master (Scheie 3). Humor, inextricable cultural contextualization, and pointed commentary are all present in the text, a play grappling with the echoes of colonialism in the 1960s while exhibiting a self-aware artifice that leaves room for audiences of any era since to consider the issues of racial identity and neocolonial relationships that the play foregrounds. *A Tempest's* acknowledgment and then disruption of racial identifiers - rooted in language both in its original text and in the implications of its translation and performance - seeks to irreparably challenge the complicity of a neocolonial audience, planting discomfort in a white colonial audience while reminding the neo-colonized just how deep the roots of oppression go.

A postcolonial analysis of *A Tempest* requires the establishment of its own semantic framework in order to effectively distinguish between the groups core to the affect of the play: the colonial, the colonialist, and the colonized. Tunisian-French scholar Albert Memmi, also born in a French colony and a contemporary of Césaire, differentiates those who benefit from colonization, the *colonizers*, into two distinct groups. The first, the *colonials*, are those individuals "part of the group of colonizers whose values are sovereign" in the colonized land, whether this be by virtue of race, class, place of birth, etc. (Memmi 56). There is no colonial who can exist neutrally in a colonized land, because regardless of individual choice, as a member of the

colonizing group, they are “received as a privileged person by the institutions, customs and people” (Memmi 61). In the context of the play, this description encompasses the entirety of the shipwrecked nobility when they first arrive on the island - their European identity and class significance privileges them even as they have been identified by Prospero as his professed enemies. Their continued existence on the island under Prospero’s rule shifts them into Memmi’s second categorization and they become *colonialists*, colonials who, by resigning to a position of ambiguity in a system that upholds their position of privilege, do not eliminate themselves from the system of oppression that perpetuates their privilege. Or, as Memmi so aptly puts: “A colonialist is, after all, only a colonizer who agrees to be a colonizer” (Memmi 89). It is this complicity, the resignation to be passive and benefit from a hierarchical system, that is often referred to now as “white privilege,” yet the passive colonialist nature of the shipwrecked nobility are contrasted by the active colonialist Prospero, who deliberately establishes and sustains the subjugation of the island’s colonized indigenous population.

Memmi is unequivocal in distinguishing a *colonized* person as a member of a nation invaded by a foreign imperial power whose rights in the colonized land are restricted and whose being is seen as inferior to that of the colonizing power. In Shakespeare’s original work, Caliban and Ariel are the characters that fit in this group, indigenous habitants of the island prior to Prospero’s arrival. Césaire immediately contextualizes the importance of racial identity to the play in the character descriptions, which are listed as “As in Shakespeare” with “two alterations,” one of them specifying Ariel “a mulatto slave” and the other listing Caliban as “a black slave” (Miller). Césaire wrote in accordance with his negritude philosophy that viewed racial identity as separate from “natural or biological attribution” and instead as a mutable cultural phenomenon, drawing authenticity in meaning insofar as racial identities have been defined at various points in history by various cultural factors,

including language and the associated labels (i.e. any word denoting or connoting racially based identifiers) (Scheie 3). In assigning specific linguistic labels to the colonized characters that differ from the source text, Césaire acknowledges and then actively subverts the notion of a Eurocentric “universality” that accompanies traditional colonialist canonical works, assuming an audience’s knowledge of the European source text and then linguistically tying the story to the present by introducing characters with apposite racial labels.

The labels of language, while powerful, are clearly not the only factors by which racial identity is defined in colonialist-colonized relationships. Césaire prefaces the forthcoming linguistic exploration of colonialism by verbally addressing the visual destabilization of identity through the Master of Ceremonies’ assignment of character masks at the start of the play, the masks physicalizing an artifice of identity necessary to alienate the audience enough such that the themes and language can become the central focus of the play. Scholar Timothy Scheie writes in depth about the significance of the mask distribution in *A Tempest*, noting the masks function to reveal the ideological constructions of power and race relations of the colonizer/colonized identities that they represent. The Brechtian distance achieved by the use of masks - distancing audiences enough emotionally in order to invite intellectual engagement with the play - disrupts notions of identity as stable and set identifiers, opening the door for an examination of language as an extension of that “rhetoric of power and oppression” of ideological racial “masks” or labels, ones that perpetuate and form ideological categories of race suitable to the ruling group (ex. “noble savages” vs. “monsters”) (Scheie 3). Césaire intended to disrupt racial identifiers in performance, specifying that he wrote this play for a “theatre negre, an all-black company,” necessitating that the white European roles - the majority of the roles - would be cross-race casting (Scheie 3). What does it mean to have black actors taking on white roles, or vice versa?

More specifically, how do we as an audience respond to hearing explicitly oppressive language coming from a black actor playing a white character, or vice versa? The masks, by virtue of being set identifiers, prompt these transgressive questions even though these questions are reliant on the “inscription of the racial boundaries” the masks represent (Scheie 4). Scheie argues that the play does not fully undermine the stability of identity because the use of masks leaves established racial identities unquestioned, as stable identities to be adopted and then critiqued. While this may be a failure when analyzing the play from a Butlerian perspective on the fluid performativity of identity, as Scheie does, it is effective in calling the established identities themselves for examination. Identities are established by cultural stereotypes and colonialist conceptions of racial identity that are further reinforced by language and oppressive labels. By acknowledging and then working from a set of accepted identities, aided by the distancing effect of the masks, Césaire is able to focus the audience’s examination on their presuppositions of racial identity and colonial relationships as a subject to be questioned rather than accepted.

Language is a primary site for both ideological colonization and resistance, a means by which colonized resisters can reject the signifiers placed upon them by the colonialists and reclaim the means of communication that excludes the colonialist. Colonization happens on a number of fronts (physical, cultural, linguistic, etc) and while each are distinctively represented in the play, language is the primary ideological force that is shown, on the one hand, to have “pressed the colonized to internalize the colonizers’ values and, on the other hand, promoted the resistance of colonized peoples against their oppressors” (Tyson 418). In their first scene together, Caliban identifies and rejects the most immediate example of Prospero’s colonialist oppression - the name “Caliban,” a label of identity prescribed by Prospero via the assumption of the superiority of his own language, and by extension, his cultural values:



CALIBAN: It's the name given me by your hatred, and every time it's spoken it's an insult.

PROSPERO: My, aren't we getting sensitive! All right, suggest something else... I've got to call you something. What will it be? Cannibal would suit you, but I'm sure you wouldn't like that, would you? Let's see... what about Hannibal? That fits. And why not... they all seem to like historical names.

CALIBAN: Call me X. That would be best. Like a man without a name. Or, to be precise, a man whose name has been stolen. You talk about history... well, that's history, and everyone knows it! Every time you summon me it reminds me of a basic fact, the fact that you've stolen everything from me, even my identity! Uhuru! (Miller 15)

The replacement of primary linguistic signifiers - personal names - imbues the semiotics of the identifier with all of the "history" of colonialist oppression that comes with an imposed language. Caliban recognizes and rejects this on a fundamental level by rejecting the name imposed upon him by Prospero and using a language that Prospero cannot understand to reclaim power, a tactic that makes Prospero overtly uncomfortable: "PROSPERO: Mumbling in your native language again! I've already told you, I don't like it" (Miller 11). Caliban asking his oppressor to call him "X" serves a double function of reclaiming his selfhood while acknowledging an irreparable loss of his culture and self that occurred when the colonization took place. Caliban's use of his native language enacts a power role reversal, undermining Prospero's supposed sovereignty by excluding him from the ideas and knowledge of another language, and by extension, eroding the assumed ideological control of colonialist values.

Along with reclaiming his original language, Caliban's mastery of Prospero's language - the language of his oppressor - further undermines colonialist-assigned labels of inferiority

intended to justify the oppression of Caliban as a colonized person. Prospero addresses Caliban with dehumanizing terms like “ugly ape,” “dumb animal,” and “savage,” using the name “Caliban” most often only in threats, again reinforcing the assigned name’s associated violence (Miller 11). Yet, Caliban is able to communicate not only in the same language, but with syntax structures that closely resemble those of the soliloquies of Shakespeare’s tragic heroes:

CALIBAN: Sycorax. Mother. / Serpent, rain, lightning.  
/ And I see thee everywhere! / In the eye of the stagnant  
pool which stares back at me, / through the rushes, / in  
the gesture made by twisted root and its awaiting thrust.  
/ In the night, the all-seeing blinded night, / the nos-  
tril-less all-smelling night! (Miller 12)

Caliban’s poetic dialogue evokes classically European linguistic verse structures, while most of the lesser white characters speak in blocks of prose characteristic of the uneducated lower classes in Shakespeare’s plays. Césaire is taking advantage of the imposed colonialist universality in both language and literary canon that allows the assumption of an audience’s knowledge of Shakespeare’s *The Tempest* and the connotations of its structure, while also relying on a familiarity with period-specific racial terms that accompany colonialist subjugation. In specifying Caliban and Ariel as a black slave and mulatto slave, respectively, the primary colonized characters are demystified from the supernatural “others” of Shakespeare’s play to recognizable character archetypes to a modern audience. Césaire again acknowledges and actively subverts the notion of a Eurocentric universality by adapting a classic character to fit a more current literary stereotype: the “mulatto,” an often negative archetype recognizable to a white European audience, yet one whose experiences are not relatable to them. Ariel’s perspective as a mixed-race individual, favored by his master for his “whiteness” yet oppressed for his “blackness,” expresses what postcolonial theorists would call cultural colonization, reflect-

ing both “the desire of colonized individuals to be accepted by the colonizing culture and the shame experienced by colonized individuals concerning their own culture, which they were programmed to see as inferior” (Tyson 421). Ariel, who views Prospero and his whiteness as inherently superior, serves as a foil to Caliban, specified as “a black slave” who expresses a very different mode of resistance to Prospero’s oppression:

ARIEL: Poor Caliban, you’re doomed. You know that you aren’t the stronger, you’ll never be the stronger. What good will it do you to struggle?

CALIBAN: And what about you? What good has your obedience done you, your Uncle Tom patience and your sucking up to him. The man’s just getting more demanding and despotic day by day.

ARIEL: Well, I’ve at least achieved one thing: he’s promised me my freedom. In the distant future, of course, but it’s the first time he’s actually committed himself.

CALIBAN: Talk’s cheap! He’ll promise you a thousand times and take it back a thousand times. Anyway, tomorrow doesn’t interest me. What I want is (shouting) “Freedom now!”

ARIEL: Okay. But you know you’re not going to get it out of him “now”, and that he’s stronger than you are. I’m in a good position to know just what he’s got in his arsenal.

(Miller 21-22)

This section in particular speaks very clearly to the time in which the play was written. Published in 1969, Césaire (himself an Afro-Caribbean man with French citizenship) was undoubtedly influenced by the American Civil Rights Movement and the various philosophies of black activists at the time. One can see parallels in this section between Caliban’s points and the more nativist ideology of Malcom X and the Black Panthers advocating for rebellion (recall also - “Call me X”) and to a lesser

extent between Ariel's arguments and the Martin Luther King, Jr.-led nonviolent, diplomatic approach to racial equality/liberation. All at once, this exchange contextualizes Prospero as the embodiment of white European oppression over black/indigenous individuals in Shakespeare's time, in the hundreds of years of slavery in the Americas, and in the then-modern iterations of colonialism by way of Jim Crow laws, Apartheid, etc. Césaire implies a new universality to audiences by drawing attention to and critiquing "the same kind of political, economic, and cultural subjugation of vulnerable nations" that has continued for hundreds of years (Tyson 425) - the economic and cultural imperialist influence of neocolonialism may have replaced the direct military and political control of original colonialism, but oppression and negotiations of racial identity remain constant.

While the original French text aims to claim and adapt a white canonized text (Shakespeare's *The Tempest*) for a post-colonial purpose, it too is operating under the influence of a colonialist power. Césaire himself was a member of the colonized group in a nation under European rule, writing in French - the language of his colonizer - while Martinique was still a colony under French rule. French influence is inextricably tied to Césaire's education and the context in which he was writing, a time just before the 1974 declaration of the island as a region of France, a guise of independence which gave the region and its citizens more autonomy without rescinding cultural influence and France's ultimate political control. The play speaks to Césaire's raw frustration of grappling with the shifting dynamics of colonialism in a Martinique just beginning to articulate its rejection of colonial violence. The stubborn grasp of France and other colonialist nations on their increasingly restless colonies is mirrored by Prospero's obstinate railings in the final scene, continuing to proclaim "his role as the defender of civilization" yet only by "repeating an exhausted racist and racializing discourse" (Scheie 4). Scheie's analysis of the original French text identifies a lackluster final message of the play that, while rais-

ing voices of colonized and disrupting the authority of a white colonialist identity, ultimately upholds the status quo:

As spectators, we cannot see the new Caliban, nor even understand his language, the language taught to him by Prospero, as it decomposes into debris. At the play's end the spectator is stuck with the familiar racial identities of the black performer wearing the white mask of Prospero, the emblem of a tired white/black racial binary. Caliban "kicks the habit"; Prospero does not, nor ultimately do the spectators for whom the deracialized subject remains an unimagined, unrealized dream. (Scheie 4-5)

Audiences viewing the play at the time of its premiere and current audiences, drawing from their neocolonial contexts, view the repetitiveness of colonialism that is here iterated in a way that expresses the frustration of a colonized population without implying a clear course of action. Scheie's perspective is that the end is ultimately demoralizing, leaving the audience discontent and with a hopeless sense of the inevitability of racial categories and colonization. I disagree. The play - both the original French text and the English translation - is inherently catered to an European influenced audience; whether white or not, this audience has experienced colonialism in some way, either by benefiting from it or feeling its oppression. Exposing the absurdity of clinging to colonialism helps to bridge the gap between the world of the play and the reality of a viewing audience, asserting in no uncertain terms that racism and oppression is not just an issue of English canons past. The futile ravings of a petty colonizer like Prospero is proven articulable in a modern English, harmful not only to those being oppressed but also, ultimately, to the oppressors in their unwillingness to reconcile with the harm they have done and dependence on a bygone power dynamic. In critically exposing the cracks in colonial conflict, the choices in the play's translation and performance provokes the audience to identify specific instances of oppression in their own broader perspective and their own role in it, which will

differ depending on each individual audience member's own context and experiences. Césaire wrote very early on in discussions surrounding colonial violence, and similar reckonings were occurring all around the world (for example, in Memmi's French-colonized Tunisia), the repercussions of which inform the neocolonial international relations contextualizing a modern audience's viewing of the play. Césaire's ambiguation of the "The" of Shakespeare's title to an "A" (or "Une" in the original French) in the title speaks to this multiplicity of colonialism - *A Tempest* tells only one example of the ravaging storm that is the violence of colonialism, but it is by no means the only one.

So far my analysis has centered around the content of Césaire's original text, yet Miller's role as the translator must not be undervalued to the structure of the text I have been analyzing. The goal of any translation is to make the original text understandable to an audience in another language, and while the translator ideally strives to be artistically and ideologically true to the original, inevitably changes must be made in order to ensure similar impact on the audience. In Miller's case, this requires acknowledgment of the cultural consciousness and references that will be most applicable for a English-speaking audience. Richard Miller's English translation of *A Tempest* reinscribes the neocolonial-critical themes of the play in a world that favors the colonizer, emphasizing the role of language itself in the perpetuation (or deconstruction) of racialized stereotypes in colonial dynamics while raising questions about the implications of translation bias on a modern audience. Recalling Memmi's definitions of roles under colonialism, those in a modern audience able to understand an English translation are either part of the "sovereign" group (i.e. European colonizers), colonials (i.e. most white Americans of European ancestry), or any marginalized group who have felt the effects of colonialism or current neocolonialist dynamics (i.e. members of former colonies where the primary language is still that of the colonialist nation). Presumably, the formerly colonized people of the latter

group are acutely aware of the anticolonial perspectives the play is foregrounding, yet the fact that they are still interacting with these themes through a European language is significant. As a white, euro-American, monolingual woman, I am only able to analyze this text through the lens of another person who has translated the message and ideas into a language that I can understand - my analysis, while attempting to be rooted in the messages of the text, is ultimately based on the English translation choices Miller made.

Due to its language of origin, this play is inextricably tied to colonialist influence, yet Miller's English translation - the language of the biggest colonial power the world has ever known - invites additional planes of analysis, especially considering that the play's source text is one of the preeminent texts in the English canon. In the translator's note, Miller addresses his deliberate choice to embrace the similarities to Shakespeare's language in the English counterparts of Césaire's French word choices, having "left the (slightly altered) song for Ariel with its Shakespearean references unchanged," despite that being against Césaire's expressed denial of Shakespearean "linguistic echos" in the play (Miller). There is a perspective critical of postcolonial theory that views the critical method as "itself a form of cultural imperialism" created and embedded in European academia and intellectual ideologies (Tyson 425). In the case of *A Tempest*, and regardless of his own racial identity, Miller's choice to highlight the linguistic similarities to Shakespeare could be seen as pandering to the traditional, Eurocentric canon and literary tradition, and in turn a structural antithesis to the anti-colonial content of the play. The English adaptation of this text is paradoxical - it is telling a story focused on oppression of colonized peoples, but adapted in a way that aims to optimize the understanding of the colonizers through one of their main tenets of "superiority" - their language and its canon. The translation is postcolonial in its desire to explicate the harm of colonialism to a colonialist audience. Does this translated text

do the type of deep cultural reclamation work of indigenous language literature or other facets of postcolonial criticism that seek to fundamentally disrupt neocolonial structures and deviate from standards of white normalcy? No. However, causing a colonialist/colonial audience to acknowledge and examine the racist ideologies behind their most treasured works and authors is a necessary piece in the larger picture of reevaluating neocolonial practices/ideologies at large. Césaire's content, when made accessible to an English-speaking audience, "does indeed avow the constraints that compel the perpetuation of worn-out identities," yet does so in a way that challenges an audience to reassess their previously unconsciously held beliefs from new perspectives and in their own contexts (Scheie 5). Ultimately, the choices made in the play's translation and performance - including the choices to translate or produce the play at all - must grapple with how the authors/artists engage with these colonialist implications in a way that respects the original work and avoids pitfalls of white-washed adaptation, while effectively provoking its audiences to engage with the play on an ideological level.

In writing *A Tempest*, Césaire aimed to unsettle notions of canonized colonialist themes, identities, and texts by reinterpreting a classical European play in a way that elevates the perspectives of the colonized to be explicitly in conversation with the perspectives of the colonizers. The mix of traditional references and linguistic echoes with more contemporary language and references is effective in provoking conversation on modern issues of neocolonialism, racial identity, and a variety of postcolonial themes, whether presented in its original French or in translation. Césaire not only embeds colonial conflict explicitly in the plot and content of the play but also in the very syntax and structure itself, unavoidably forcing audiences to grapple with issues of both overt colonial/racial oppression and ideological/cultural oppression. Scheie's critique holds that the play ends with an "unrepresentable dream of a post-racial utopia,"



with Prospero's colonialist "exhausted and discredited reality" persisting in the end both on stage and off (Scheie 5). His point holds true: a racially divided reality does continue to persist, even while the oppressed recognize and fight their oppression, as was the case in the 1960s in Memmi's Tunisia, the United States, and Césaire's Martinique, and as remains the case today for those involved in 21st-century resistance movements all around the world. The tumultuous and unresolved ending does suggest, however, the necessity of discomfort and multifaceted ideological conflict as agents for motivating recognition and structural change in a colonial audience. Miller's translation assists in the agitation this play is capable of by making a colonized perspective available to a broader audience. Perhaps that was Césaire's goal as well, to disrupt the French colonialists/colonials in Martinique, or any French audience engaging with the play today - neocolonialism isn't just a French and English issue. By continuing to translate and perform this play, its ideas and political potential persist, as artists and audiences reinterpret and re-engage with what colonialism and oppression mean in their time. This play, in a way, takes the route that Ariel suggests in the play, using the tactics and language (literal and metaphorical) of the oppressor to work against them, to put it in their own terms so it is harder for them to discount the perspectives being presented, to "destroy his serenity so that he's finally forced to acknowledge his own injustice and put an end to it" (Miller 22).

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War, Ruin and Suicide: The Agendas Behind the  
Modern Masada Legacy  
*Maxxe Albert-Deitch*

**Abstract**

The Masada site in Israel is the source of devotion and consternation in equal measure due to the particular treatment and interpretation of the archaeological excavation of the site. The initial 1963-65 Masada excavations led to multiple discrepancies between the initial surveys and the later archaeological reports. These later reports seem to ignore potentially important evidence in favor of supporting one specific narrative — one designed to cement a cultural and historical connection to the Masada site, thus increasing support of Israel as a nation from people in the Diaspora. This study delves into the archaeological and geopolitical implications of the Masada excavation, engaging questions of religious justification, zealotry, and what happens when someone pursues a story in favor of history — and ends up shaping that history in the process.

## Introduction

The Masada fortress site, near the Dead Sea and the Israel-Jordan border, is one that has garnered significant controversy throughout history. The cultural narrative that many people associate with the site has influenced choices in the “official” history and may have even influenced the archaeological excavations of the site itself. Culture, religion, and history already intersect and complicate one another. Those crossovers grow even more convoluted in the context of a country like Israel: a Jewish nation, established with the help of foreign military and government aid, located in the middle of a historically conflict-heavy zone, whose stability largely depends on international alliances, many of which came into existence based on religious affiliations. Masada itself has become a touchstone of religious connection for many Jews, but the site and its history are far more complex than that. The initial 1963-65 Masada excavations led to multiple discrepancies between the initial surveys and the later archaeological reports (once the excavations had begun). These later reports seem to ignore potentially important evidence in favor of supporting one specific narrative— one designed to cement a cultural and historical connection to the Masada site, thus increasing support of Israel as a nation from people in the Diaspora.

## Masada, Josephus, and the Death-Givers

Awareness of Masada’s history and cultural legacy goes back to well before the mid-60s excavation. Titus Josephus Flavius (born Yosef ben Matiyahu) wrote the first version of the siege story to become popular—and popular indeed it became. His narrative, written circa 66-70CE, details the story of Jewish zealot fighters, *sicarii*, who waged the last battles for the freedom of the ancient kingdom of Judea—a battle against the Romans, a conflict fought valiantly and eventually lost.<sup>1</sup>

1 Cohen, Shaye J. D. *Josephus in Galilee and Rome: His Vita and Development As a Historian*. Brill, Leiden, 2002.

Josephus' story is a tragic tale of sacrifice, in which the men of the Masada fortress drew lots to decide who would become the "death-givers." These men would kill their own families, burn the storerooms, and desecrate the synagogue before eventually killing one another, before the Roman legion camped below could get the chance to do so. In Josephus' version of the story, two women and five children (of which he claims to be one) escaped the siege, only to be captured by the Romans as slaves. Josephus converted, and was eventually adopted into the Flavius lineage, intentionally abandoning his Jewish heritage. He published the story of the siege as a part of his "life history," an autobiography that makes a point of highlighting the "generosity" of the Roman legion.<sup>2</sup> Reversed loyalty aside, Josephus' narrative became the story that defined the Masada siege, creating a legend that lasted through the centuries, told in whispered tones among Diaspora Jews over the centuries.<sup>3</sup>

Through various iterations of the story, the temple-desecrators and death-givers became heroes who would rather die than give up their home and their religion.<sup>4</sup> The story particularly appealed to exiled Jews in times of trouble—the narrative was most frequently re-told and re-popularized in times of

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2 Atkinson, Kenneth. "Noble Deaths at Gamla and Masada? A Critical Assessment of Josephus' accounts of Jewish Resistance in Light of Archaeological Discoveries." *Making History*, January 1, 2007, 347–71.

3 Magness, Jodi. "A Reconsideration of Josephus' Testimony about Masada." *The Jewish Revolt against Rome*, January 1, 2011, 343–59. [https://doi.org/10.1163/9789004216693\\_014](https://doi.org/10.1163/9789004216693_014).

4 Green, Arnold H. "History and Fable, Heroism and Fanaticism: Nachman Ben-Yehuda's 'The Masada Myth.'" *Brigham Young University Studies* 36, no. 3 (1996): 403–24.

trouble and heightened antisemitism.<sup>5</sup> Some examples include versions from early fourteenth-century England, published not long after the mandate that pushed the Jews out of Britain. Some modern-day biblical researchers speculate that it was written by a Jewish scholar who remained in Britain but in hiding, but the authorship of this particular version of the story remains unknown.<sup>6</sup> Another was written in Ladino in the 1500s during the time of the Inquisition.<sup>7</sup> Unsurprisingly, the story was re-popularized once more in the 1940s during Hitler's rise to power. It was passed around through Resistance movements in Europe, notably making its way back to the Judean desert before 1948, when the lines that created the borders for the modern-day state of Israel were officially drawn.<sup>8</sup> Of course, Masada was within the borders of Mandatory Palestine, and the Jews already living in the Levant would have expected Masada to become part of an eventual Jewish state. However, the narrative ended up playing into the geopolitics of the area more deeply than many might have expected.

### **Modern Implications of the Masada Myth**

When modern-day tourists and student groups visit the Masada site, they walk the “snake path” before sunrise, following the steps of the zealot soldiers who once defended the mountain fortress. Guides inform visitors about the men who founded the modern state of Israel, who walked in the footsteps of their forefathers and trod the Roman ramp and twisting stonepaths of the Herodian fortress under cover of night. These

5 Kolitz, Zvi. “Masada — Suicide or Murder?” *Tradition: A Journal of Orthodox Jewish Thought* 12, no. 1 (1971): 5–26.

6 Kalimi, Isaac, and Yiṣḥāq Qalīmî. *Early Jewish Exegesis and Theological Controversy: Studies in Scriptures in the Shadow of Internal and External Controversies*. Uitgeverij Van Gorcum, 2002.

7 Ibid.

8 Ibid.

men climbed not for the view of the sunrise at the top but for fear that they might be shot if they were seen.<sup>9</sup> In the years leading up to the founding of Israel, and as the “never again” mantra gained momentum among the global Jewish community following the Holocaust, the story of the Masada siege and the fortress’ last defenders became newly popular once again. The men who walked through the fortress and killed their friends, peers, and families were deemed not cowards but brave men who did what had to be done.<sup>10</sup> They protected their faith above all else—a powerful message to people who had just survived the Holocaust and the Second World War.<sup>11</sup> In 1944, Shimon Peres (who would later become President and Prime Minister of Israel) led an expedition into the Negev in conjunction with multiple Israeli political groups. That expedition formed the basis for a push to ensure that Masada would be located solidly inside the borders of the new state of Israel, as opposed to remaining a part of a future Palestine or Jordan.<sup>12</sup> When Peres joined the Haganah in 1947, an early precursor to the Israeli Defense Forces (I.D.F), he brought his new motto with him: “For Masada.” Even today, that motto persists as the rallying

9 “Masada National Park – Israel Nature and Parks Authority.” Accessed January 22, 2020. <https://www.parks.org.il/en/reserve-park/masada-national-park/>.

10 Spero, Shubert. “In Defense of the Defenders of Masada.” *Tradition: A Journal of Orthodox Jewish Thought* 11, no. 1 (1970): 31–43.

11 Zerubavel, Yael. “The Death of Memory and the Memory of Death: Masada and the Holocaust as Historical Metaphors.” *Representations*, no. 45 (1994): 72–100. <https://doi.org/10.2307/2928603>.

12 Leuenberger, Christine, and Izhak Schnell. “The Politics of Maps: Constructing National Territories in Israel.” *Social Studies of Science* 40, no. 6 (December 1, 2010): 803–42. <https://doi.org/10.1177/0306312710370377>.

cry for the I.D.F.<sup>13</sup> The Masada site carries extreme cultural significance, both for Israeli citizens and for Diaspora Jews. Guides encourage visitors to imagine themselves in the place of the *sicarii*, as well as the death-givers.<sup>14</sup> The experience of entering the fortress on a sanctioned tour is dizzying. One climbs the stairs at night, in the cold empty desert with the path lit only by a couple of flashlights and maybe a torch. Visitors reach the top just in time to watch the sunrise over the mountains and the desert, as the more religious visitors and most of the guides strap on *tefillin* and begin to pray. The experience is a highly spiritual one for some, and simply a beautiful vista for others. For most, however, it is the realization of a story told time and time again, through multiple generations, through childhood. Indeed, many Jewish adults do not remember the first time they heard the story; they simply know that they know it. The drive through the desert and the hike to the fortress gates is more than a mere visit. It is a pilgrimage—or at least that is what history has built it up to be (the very fact of Masada’s popularity is odd, given that Judaism traditionally downplays most martial or militaristic stories. The fall of Jericho, for instance, is a footnote, while the Maccabean revolt resulted in Hanukkah, a minor holiday that has only recently grown popular to offset the commercial success of Christmas. Yet Masada remains one of the most popular religious tourism destinations in the Levant).

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13 Paine, Robert. “Masada: A History of a Memory.” *History and Anthropology* 6, no. 4 (January 1, 1994): 371–409. <https://doi.org/10.1080/02757206.1994.9960835>.

14 Zeitlin, Solomon. “The Sicarii and Masada.” *The Jewish Quarterly Review* 57, no. 4 (1967): 251–70. <https://doi.org/10.2307/1453654>.



## Archaeology at Masada: Introducing Yigael Yadin

Most of what modern researchers know about the Masada site stems from the discoveries of archaeologist Yigael Yadin. The list of primary sources on the subject of Masada is limited. There is Josephus' narrative, which is controversial for several reasons, including Josephus' defection to the Roman forces. The text's autobiographical format, published well after the events of the actual siege, is also problematic. Memory is fallible, particularly when shaded by a change in loyalty. If we choose to rely on more recent, archaeology-based research, then the main primary source would become the initial survey of the Masada site, conducted in the late 1950s before archaeologists were even allowed to put shovels into the ground.<sup>15</sup> The survey reveals the structural underpinnings of the Masada legends, but also offers far more archaeological significance about the site itself. There are water cisterns that connect to a fairly elaborate hydraulic system of Roman design. There is a section of dwelling-spaces that were almost certainly slave quarters. Some spaces functioned as women's quarters, where textile work, cooking, and artistry likely took place.<sup>16</sup> Any of these sections of the survey would have been worthy of close examination and

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15 Smallwood, E. Mary. "Yigael Yadin: Masada: Herod's Fortress and the Zealots' Last Stand. Pp. 272; 212 Ill., 20 Maps and Plans. London: Weidenfeld and Nicolson, 1966. Cloth, 63s. Net." *The Classical Review* 17, no. 2 (June 1967): 228–29. <https://doi.org/10.1017/S0009840X00324441>.

16 Patrich, Joseph. "The Buildings of Masada - E. Netzer, Masada III. The Yigael Yadin Excavations 1963-1965 Final Reports: The Buildings, Stratigraphy, and Architecture (Israel Exploration Society and the Hebrew University of Jerusalem 1991). Xxviii + 655 Pp., 79 Plans, 945 Ill. NIS 240.00." *Journal of Roman Archaeology* 6 (ed 1993): 473–75. <https://doi.org/10.1017/S1047759400011880>.

detailed excavation reports.

However, the only reports from the Masada site easily accessible to the public today are those from Yigael Yadin's archaeological excavations in the mid-1960s. Yadin would go on to an illustrious academic archaeology career, followed by a significant political career within the Israeli government. He may have been considering his future political trajectory when he made excavation choices that left some of his contemporary academics puzzled. Most archaeologists would consider a survey like the one conducted in the 1950s and look for a midden pit, a water source, and hydraulics systems to get a sense of how the fortress functioned, who lived there, and how the different layers of the archaeological record all interacted with one another. Yadin took a different approach entirely: he zeroed in on the Masada myth and the Herodian fortress design, looking almost exclusively at the religious and military history of the fortress and paying very little attention to the cisterns, the women's quarters, or the slave quarters.

Yadin's reports offer extraordinary insight into the lives of the people who lived at the fortress in the middle of the first century C.E. if one assumes, as Yadin does, that the only people who lived within the fortress were "men of fighting age." He goes into extreme detail in his description of the barracks, noting how many men could have fit, what weapons were fashioned in the space (knives, scythes, and bows and arrows, for the most part). His team excavated the synagogue space, marking out where a *mechitzah* might have gone, outlining the space for an altar, for a wall, for benches or pews or chairs.<sup>17</sup> Yadin's report devotes several paragraphs to the storerooms and the multiple ways in which they might have been ruined—burning,

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17 Yadin, Y. "Masada and the Limes." *Israel Exploration Journal* 17, no. 1 (1967): 43–45.

— — —. "The Excavation of Masada—1963/64: Preliminary Report." *Israel Exploration Journal* 15, no. 1/2 (1965): 1–120.

flooding, urination—and then questions how the temple might likewise have been desecrated.<sup>18</sup> He spent months searching for and eventually finding a bowl full of stones, each with a recognizable Hebrew name etched into it. In theory, these rocks were the lots drawn to decide who would be the death-givers, if one accepts the version of the story popularized throughout history.<sup>19</sup>

These rocks are perhaps the root of the most significant controversy of all surrounding Yadin's reports—that he deliberately sought evidence to provide confirmation of the popularized Masada legend, rather than starting at a point of neutral knowledge and using archaeology to build a case for an evidence-based narrative. Yadin's work at Masada was not low-profile—he published his reports in Hebrew and in English, releasing his findings in archaeological journals around the world, with particular attention to American and British academic and religious journals.<sup>20</sup> At first, readers were delighted

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18 Collins, John J. Review of *Masada: The Yigael Yadin Excavations 1963-1965* by Joseph Aviram, Gideon Foerster, Ehud Netzer; *Masada I: The Aramaic and Hebrew Ostraca and Jar Inscriptions* by Yigael Yadin, Joseph Naveh; *The Coins of Masada* by Yaacov Meshorer; *Masada II: The Latin and Greek Documents* by Hannah M. Cotton, Joseph Geiger, J. David Thomas; *The Documents from the Bar-Kochba Period in the Cave of Letters: Greek Papyri* by Naph-tali Lewis; *Aramaic and Nabatean Signatures and Subscriptions* by Yigael Yadin, Jonas C. Greenfield, *Journal of Biblical Literature* 110, no. 2 (1991): 340–43.

19 Ibid.

20 Hamilton, R. W. “Y. Yadin. Masada: Herod's Fortress and the Zealots' Last Stand. Translated from Hebrew by Moshe Pearlman. London: Weidenfeld and Nicolson, 1966. Pp. 272. Numerous Illus. (Many in Colour), Incl. Maps and Plans. £3 3s.” *The Journal of Roman Studies* 57, no. 1–2 (November 1967): 272–73. <https://doi.org/10.1017/S0022278X00000000>

that someone had been allowed to break ground at the Masada site. Any knowledge gleaned from the hard rock of the fortress was uncontested and uncontestable, and Yadin's work effectively remained untouchable for the first few years after the excavations began.

### **Controversy over Yadin's Work**

It did not take long before other researchers—including people who had never been to the Masada site, and indeed had never set foot in Israel—began to notice discrepancies between the initial survey and Yadin's work. Some critics who had never even seen the survey had issues with Yadin's methodology. A British excavation team working on the Roman encampment about halfway down the mountain from Masada found evidence of nomads in the desert as well as Jewish settlements concurrent with the years that the zealots would have been defending Masada as the last outpost of Judea.<sup>21</sup> Such a finding would indicate that some Jews were peacefully coexisting with the Romans, which did not fit Yadin's narrative. Yadin's reports never acknowledge those findings, although the sites are close enough together that there almost certainly should have been some crossover between the two in the archaeological record. The peaceful desert nomads might not have made their way up the mountain or into the fortress. However, a place as isolated as Masada would have been highly likely to trade with nearby communities for material goods, none of which show up in the archaeological record. Archaeologists from around the world clamored for more detailed work pertaining to the cisterns and the hydraulics of the fortress, as the pipes of the Herodian bath-

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[org/10.2307/299387](https://doi.org/10.2307/299387).

21 Richmond, I. A. "The Roman Siege-Works of Masàda, Israel." *The Journal of Roman Studies* 52, no. 1–2 (November 1962): 142–55. <https://doi.org/10.2307/297886>.

house spaces were extraordinarily well-preserved due to the dry desert climate. Such preservation would have allowed excavators to examine key elements of Herodian engineering and design in extraordinary detail, and any well-trained archaeologist (which Yadin certainly was) would have—and arguably should have—taken particular note of these aspects of the dig site. But Yadin never released his notes on the subject. Indeed, work on the cistern area excavation did not begin until after 2010 (and is still incomplete as of 2020). Other archaeologists, including Biblical researchers with a focus on proving the 1948-bordered Israel to be the true holy land, spent the latter half of the twentieth century uncovering details of ancient daily life and ancient politics through pottery, through textiles, and through ancient, semi-preserved scraps of parchment.<sup>22</sup> Yadin did no such thing at Masada, even though the conditions for preservation were far better on top of a mountain in the desert than almost anywhere else in the region.<sup>23</sup>

The various criticisms of Yadin's work sparked a quiet but persistent debate in the worldwide archaeological community. Through the 1960s, archaeologists from around the world gained access to Yadin's published works, and as Israel gradually opened up its archaeological sites for increased global access, many of these professionals began to push back against Yadin's declarations. A Dutch scholar named Bastiaan Jongeling, who conducted archaeological and historical research in the Negev between 1958 and 1969, wrote about interactions between small societal groupings in the desert in this period (first century C.E.)—the same nomadic groups and small settlements that the British excavation uncovered. Jongeling expressed concern that Yadin's excavation did not make any reference to other dig

22 Firestone, Reuven. *Holy War in Judaism: The Fall and Rise of a Controversial Idea*. Oxford University Press, Oxford, UK. 2012

23 Yadin, Yigael. "Masada and Its Scrolls" Volume 42, Issue 4 . New York, New York. 1966. 41

sites in the area, or to other scholars' work—Jongeling's own included. Scholars in the United States and Britain echoed that concern, particularly those writing for archaeological journals. Solomon Zeitlin, an archaeologist who worked and researched on behalf of the University of Pennsylvania in the 1960s, was vocal in his statement that Yadin "pushed aside" suggestions from outside consults, and "pursued a variation of truth" instead of pushing for solid archaeological evidence.<sup>24</sup> H. Darrell Lance, whose research (concurrent with Yadin's) was published in the *Cambridge Review*, expressed concern on an academic level at Yadin's refusal to allow outside researchers onto the Masada site.<sup>25</sup>

### **The Geopolitics of Yadin's Archaeology**

Academicians were not the only people to grow irritated with the exclusivity and even carelessness of Yadin's research. Even while the initial excavations were underway, the Masada site's politics were clear. Some criticism devoted to the site was rooted in anger at the mistreatment of Palestinian inhabitants of the land, forced out by the establishment of the Israeli state. Attempts like Yadin's to make Masada a cornerstone of modern Jewish and Israeli existence received significant pushback from various scholars (most notably, Barnet Litvinoff's impassioned case against Yadin's work as published in the *Journal of Palestine Studies*).<sup>26</sup> By the early 1970s, multiple Christian Zionist or-

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24       Zeitlin, Solomon. "The Sicarii and Masada." *The Jewish Quarterly Review* 57, no. 4 (1967): 251–70. <https://doi.org/10.2307/1453654>.

25       Lance, H. Darrell. "The Royal Stamps and the Kingdom of Josiah." *Harvard Theological Review* 64, no. 2–3 (July 1971): 315–32. <https://doi.org/10.1017/S0017816000032570>.

26       Litvinoff, Barnet. "The Fall from Grace of Zionism." *Journal of Palestine Studies* 10, no. 1 (1980): 185–87. <https://doi.org/10.2307/2343654>.

ganizations and publications had sided with Yadin, and staunchly defended his treatment of the site.<sup>27</sup> These articles, or at least the research contained in them, leaked into the world of Biblical archaeology, continuing to perpetuate Yadin's argument. In the years directly following the publication of Yadin's initial findings, articles appeared in the *Israel Exploration Journal*<sup>28</sup> that shared evidence with Yadin's own work in *The Biblical Archaeologist*,<sup>29</sup> which in turn contained articles in common with the *Harvard Theological Review*.<sup>30</sup> By 1975, the Masada site had become a hotbed of academic debate—but confusingly, a majority of those arguments fizzled out with significantly less heated articles around the year 1980. Perhaps the Zionist archaeologists and theologians won the day, or perhaps Yadin's political influence had grown too great to argue with (which seems unlikely, as there was plenty of criticism of Israel in academic circles); evidence on the subject is unclear. It is worth noting that even as people remained aware of the controversy surrounding Masada and Yadin, the rate of publication about that controversy slowed to a halt within twenty years of Yadin's work on the site.

Even as the voices of criticism against Yadin's research grew louder, the archaeologist in question never swayed from his stance that he was conducting the best research possible, that the Masada legend was true and uncontestable, and that the ar-

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[org/10.2307/2536502](https://doi.org/10.2307/2536502).

27      Merkle, Paul Charles. *The Politics of Christian Zionism, 1891-1948*. Psychology Press, 1998.

28      Ben-David, A. "Ha-Middah Ha-Yerushalmit: An Archaeological Solution of a Talmudic-Metrological Problem." *Israel Exploration Journal* 19, no. 3 (1969): 158–69.

29      Yadin, Yigael. "The Temple Scroll." *The Biblical Archaeologist* 30, no. 4 (December 1, 1967): 135–39. <https://doi.org/10.2307/3211021>.

30      Lance, 1971.

chaeological record supported his findings and the story. Writers like Nachman Ben-Yehuda have made academic careers from dissecting Yadin's archaeological work, but Yadin's narrative somehow remains the dominant one in the history of Masada.<sup>31</sup>

The litany of criticism and questions surrounding Yadin's work eventually died down. Aside from Ben-Yehuda's work, most of the pieces that dispute *any* of Yadin's work were published before 1980. Most pieces published afterward are from religious or political journals, and take issue with which country should assume ownership of Masada, as opposed to questioning the archaeological work. Whether Yadin's archaeology was properly handled or a matter of finding evidence to support a nationalist myth did not seem to matter. It is as though people were so eager to believe in the myth that even strong academic voices were willing to fade into the background rather than argue with possibly not-so-solid research that provided the grounding for the story.<sup>32</sup>

So why was Yadin's work deemed so successful? As many sources have noted, his thoroughness seems to have extended only to the parts of the site related to its military history from the first century C.E. and surrounding contexts.<sup>33</sup> He did not welcome other ideas, nor was he willing to share his notes with anyone outside of his small and exclusive research team. Yet somehow, Yadin's research prevailed as some of the most important published works of archaeology surrounding Israel in the twentieth century. The pieces do not seem to add up, at least not according to the conventions of archaeology and academic

31 Ben-Yehuda, Nachman. *Masada Myth: Collective Memory and Mythmaking in Israel*. Univ of Wisconsin Press, 1996.

32 Wishau, Emma. "Mythmaking of Masada," 2014. <https://minds.wisconsin.edu/handle/1793/70256>.

33 Silberman, Neil Asher. "Sacrificing Truth: Archaeology and the Myth of Masada." *The Middle East Journal* 57, no. 2 (April 1, 2003): 342.



publication elsewhere in the world. That said, one must remember that Israeli archaeology in the 1960s-80s existed in a state somewhat isolated from the rest of what would be called “normal” to the academic world.

Yadin’s work took place in a version of Israel that looks both similar to and different from the country that exists today. In the 1960s, when Yadin began work on Masada’s excavation, Israel was still actively fighting for its footing as a Jewish state in an extremely hostile, primarily Islamic Middle East.<sup>34</sup> Much of the underlying tension from the European colonialist powers having drawn the Israeli borders across Middle Eastern land was beginning to boil over.<sup>35</sup> Twenty years after World War Two had ended, the argument that many Jewish people had nowhere else to go was less effective than it had been in 1948. The Israeli government needed a strong justification to maintain the borders of the land that was only tenuously still in their grasp, and they needed support from other governments elsewhere in the world to be able to do so—Israel’s political stability has always been dependent on its own military strength and its allies elsewhere in the world.<sup>36</sup>

In this context, the need for a narrative like that of Masada makes sense, as does the popularity of Yadin’s version of events. Supporters of Israel—most notably, Diaspora Jews and Christian Zionists in the United States and in Britain—would very much have wanted to support Yadin’s story, even knowing the complications, controversies, and possible discrepancies associated with it, because providing a historical basis for Israeli ownership of that side of the Negev would have been a signifi-

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34 Bar-Tal, Daniel, and Dikla Antebi. “Siege Mentality in Israel.” *International Journal of Intercultural Relations* 16, no. 3 (June 1, 1992): 251–75. [https://doi.org/10.1016/0147-1767\(92\)90052-V](https://doi.org/10.1016/0147-1767(92)90052-V).

35 Ibid.

36 Lomsky-Feder, Edna, and Eyal Ben-Ari. *The Military and Militarism in Israeli Society*. SUNY Press, 1999.

cant boon for the struggling Israeli state at the time. Employing Yadin's narrative as the basis for historical Jewish ownership of Masada and, therefore, modern Israeli ownership of that border meant some degree of security for Israel's continued existence.<sup>37</sup> For many religious historians, philosophers, and clergymen, proving the Jewish ownership of Masada was just as important as placing the Jewish seat of the Israeli government in Jerusalem—critical to establishing and maintaining a Jewish state, and deeply meaningful in the context of religious tourism and garnering support for Zionists around the world.

Of course, the desperate desire for “proof” of the Masada legend was not limited to people living outside of Israel's borders. By the mid-1960s, Israel was populated mainly by people like Peres and Yadin, who had lived most of their lives surrounded by constant conflict, as well as Holocaust survivors and their children, now coming of age in a world where many American and European powers felt that global conflicts around the were dying down. All the while, Israel was still struggling to maintain its foothold on existence. So, the idea of a “national mythology,” or an origin story, would have been extremely attractive to the Israeli population by the time that Yadin's work was becoming popular. This theory makes particular sense when one considers that unlike the mythos surrounding Jerusalem, which was grounded in the word of the Old Testament and other strictly religious texts, the history of Masada was grounded at least somewhat in physical evidence.<sup>38</sup> Yadin's narrative plays

37      Gelvin, James L. *The Israel-Palestine Conflict: One Hundred Years of War*. Cambridge University Press, 2014.

38      Silberman, Neil Asher. “From Masada to the Little Bighorn: The Role of Archaeological Site Interpretation in the Shaping of National Myths.” *Conservation and Management of Archaeological Sites* 3, no. 1–2 (January 1, 1999): 9–15. <https://doi.org/10.1179/135050399793138699>.

into the same creation myth as various claims of cultural ownership over Israel, but does so within the construct of archaeology, structured academic history, and even science.

The story of the Masada siege, after all, goes back to the Romano-Judean wars, and while it was religious, it was not strictly biblical.<sup>39</sup> This key difference meant that Jews could claim cultural ownership of the Masada legend, regardless of their level of religious observance. Jews who grew up in Palestine, before the Israeli declaration of statehood, could make an ancestral claim to Masada. People whose families consisted of Holocaust survivors could honor the warriors who chose religion over slavery or death, who had the courage to commit suicide rather than be slain.<sup>40</sup> The Israeli Defense Forces (I.D.F) already had a tradition of hiking Masada before dawn, just as Shimon Peres did back in 1944 and just as visitors to the site do today. Reviving the legend through its history and archaeology was a surefire way of keeping the story alive and maintaining a sense of nationalism in a country where some outside forces insisted that the people living there had no right to nationhood.<sup>41</sup> The Masada story was a near-perfect way to combat pressure to surrender the border, and people both inside and outside of Israel latched onto it and held on tight.

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39 Davies, Gwyn. "Under Siege: The Roman Field Works at Masada." *Bulletin of the American Schools of Oriental Research* 362 (May 1, 2011): 65–83.

40 Amossy, Ruth. "From National Consensus to Political Dissent: The Rhetorical Uses of the Masada Myth in Israel." *Rivista Italiana di Filosofia del Linguaggio* 6, no. 3 (2012): 1–15. <https://doi.org/10.4396/29>.

41 Kohl, Philip L., Mara Kozelsky, and Nachman Ben-Yehuda. *Selective Remembrances: Archaeology in the Construction, Commemoration, and Consecration of National Pasts*. University of Chicago Press, 2008.

Like many Israeli citizens, Yadin spent significant time in the I.D.F. (at that point, the Haganah) early in his adult life, having left service for university only to be called back before he graduated. By the time Yadin arrived at the site, he had already begun to make the political connections that would launch his future career as a politician and perhaps some of those connections led him to make some of his archaeological decisions. Yadin's work on the Masada site placed him in the limelight as the face of the region's hottest<sup>42</sup> archaeological project. He was the man who uncovered the most culturally significant geographic location in Israel outside of Jerusalem. He was the man who had affirmed the story of ancient Judea's last stand. On top of that, he had connections. His time in the military had led to friendships or at least alliances on both sides of the political aisle. He held the respect of Peres and of David Ben-Gurion (though the latter relationship disintegrated after a few years). Yadin's military rank of *Rav Aluf*, the highest rank one can hold in the Israeli army, made his appointment to Chief of Staff (and later, Deputy Prime Minister) an easy one.<sup>43</sup>

### Putting Masada in Context

By the time Yadin's work on the Masada site was wrapping up, he had already been the star archaeologist for work with the Dead Sea Scrolls, Tel Meggiddo, and Hazor. Every site he investigated became another entry in the list of culturally significant sites with a historical and religious reason why the

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42 Of course it was hot. Masada is in the desert. Hiking the mountain in the dark, however, can be very chilly thanks to high winds and high altitude.

43 Miller, Shane. *Desert Fighter: The Story of General Yigael Yadin and the Dead Sea Scrolls*. Hawthorn Books, 1967.

land should belong to *Israel*, the Jewish state.<sup>44</sup> Between Yadin's military relationships and his subsequent work developing a cultural narrative for Israel, it naturally follows that he would have been crafting that narrative of cultural ownership during his work on Masada. Doing so would have benefitted Israel, and given his political trajectory, it would have benefitted Yadin, if indirectly, through a growing sense of nationalism and Zionism *outside* of the Israeli borders. It cemented Yadin's legacy as a political figure as well as a military and academic one.

Even the fact that Yadin published his writings in English-speaking journals makes sense in terms of his political trajectory. Britain's involvement in the development of Israel as a colonial power frequently gets overlooked because the British *government* was then supporting Jordan, a hostile neighbor to the northeast side of Masada and across the Dead Sea.<sup>45</sup> But a large number of British individuals (most of them Christian Zionists, backed by religious groups, aristocrats, and a few staunchly conservative politicians) remained in Jerusalem for nearly four decades after Israel was fully legally established. For nearly fifty years<sup>46</sup>, unofficial political meetings were held in the King David hotel in Jerusalem—meetings that Yadin attended.<sup>47</sup> By garnering support internationally, Yadin essentially

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44 Zerubavel, Yael. "The Multivocality of a National Myth: Memory and Counter-memories of Masada." *Israel Affairs* 1, no. 3 (March 1, 1995): 110–28. <https://doi.org/10.1080/13517129508719340>.

45 Merkle, Paul Charles. 1998.

46 Pawson, David. *Defending Christian Zionism*. Anchor Recordings Ltd., 2014.

47 Gorenberg, Gershom. *The End of Days: Fundamentalism and the Struggle for the Temple Mount*. Oxford University Press, U.S.A., 2002.

used archaeology to build the podium and platform that would allow him to hold office—and Masada was an enormous part of that process. To some extent, it seems clear that Yadin exploited the contacts he had already made in order to further the political career he had not yet announced.

## In Conclusion

One has to question why Yadin chose Masada. The legacy and legend of the fortress is not without its complications, which Yadin would certainly have known. Despite the accolades heaped upon the soldiers who defended Judea's last stand and the status that the site now holds, the fact remains that Masada's legacy is highly problematic in several ways. The Jewish rabbinate frowns deeply upon suicide. There is a section of Jewish scripture that openly states that one should choose one's own well-being over following Judaic law.<sup>48</sup> Synagogue desecration is considered the ultimate betrayal of Jewish values. The zealots atop Masada, particularly the venerated death-givers, violated those ideals—even according to Josephus' story, which ostensibly frames these men as heroes.<sup>49</sup> That said, the deeply nationalist men who crafted the Masada myth we know today openly chose to hang their proverbial hats on *that spot* as the basis for cultural ownership of the land. They made Masada a literal hill on which to die. Yet because Yadin's version of events represents and exemplifies the official narrative, the site is riddled with controversy, with historical discrepancies, with mysteries that may never be answered thanks to the now-present archaeological bias towards only searching for the already-suspected at

48 Roth, Jeffrey I. "The Justification for Controversy under Jewish Law." *California Law Review* 76, no. 2 (1988): 337–90.

49 Hoenig, Sidney B. "Historic Masada and the Halakha." *Tradition: A Journal of Orthodox Jewish Thought* 13, no. 2 (1972): 100–15.

Masada.

In the end, perhaps the doubt cast on Masada does not matter. The site has attained a legacy that seems untouchable today—to the point where even if modern historians never know exactly what happened, everyone knows the story of what people would like to *believe* happened. The site's true story may fall into obscurity, but what remains is its place in modern history. Masada has become a touchstone of modern Diaspora Zionism as well as Israeli nationalism. Yadin's work served as a masterfully crafted launchpad for an undeniably successful academic and political career. The chosen cultural narrative seems sufficient to outweigh actual events.

Perhaps Yadin's failings as an archaeologist matter little in the face of his actions on the grander political stage. Today, Israel owes a large part of its national identity (and the self-identity of many Israeli citizens) to the narrative crafted by the man who led the excavation of Masada and the people who crafted the story and the rallying cry. Even so, one must ask if anyone wonders about the truth, as they climb the snake path at dawn to shout at the sky. "For Masada!" they cry. But do they shout for the Masada they know, or the one carefully built for them to believe in?

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The Power of Identity: Analyzing Ecuadorian  
Indigenous Resistance to the Neoliberal State and  
Capitalist Institutions  
*Marwa Elessawy*

**Abstract**

This paper explores the rise of the Indigenous movement in Ecuador and its role as a dominant player in the political arena. It traces the adaptive shifts in organizing strategies of the trailblazing movements of the 1990s to the presidential administration of Rafael Correa. Although historical organizational ties with socialist and communist parties partially contributed to the potent Indigenous movement, the unique vision and demands of the movement exceed the ambit of traditional socialism. Applying principles from *Sumak Kawsay*—an ancient Quechua word that alludes to harmonious livelihood with communities, other persons, and nature—Indigenous communities in Ecuador have mobilized an anti-capitalist opposition to the government and multinational corporatism, including Chinese-funded mining projects. The Confederation of Indigenous Nationalities of Ecuador (CONAIE), the principal organization in Ecuador representing the various Indigenous communities, has been at the forefront of the national resistance advocating for a plurinational state that recognizes the plethora of Indigenous nationalities as autonomous. The call for a plurinational state constitutes the movement's heart, as activists employ the concept to prevent the movement's co-optation and as a measurement to judge policy. Overall, the Indigenous movement in Ecuador stands as a global exemplar for resistance to neoliberal policies, obtaining substantial accomplishments that continue into the present. By interlacing Indigenous social identity with broader social movements, Indigenous activists have underscored the significance of intersectionality for achieving economic justice. Contemporary

socialist movements should take more careful note of intersectionality and practice inclusivity over paternalism. The trajectory of the Indigenous movement also shows that a uniform theory of social change is nonexistent; local context should be taken into account when outlining a path towards social change. national resistance advocating for a plurinational state that recognizes the plethora of Indigenous nationalities as autonomous. The call for a plurinational state constitutes the movement's heart, as activists employ the concept to prevent the movement's co-optation and as a measurement to judge policy. Overall, the Indigenous movement in Ecuador stands as a global exemplar for resistance to neoliberal policies, obtaining substantial accomplishments that continue into the present. By interlacing Indigenous social identity with broader social movements, Indigenous activists have underscored the significance of intersectionality for achieving economic justice. Contemporary socialist movements should take more careful note of intersectionality and practice inclusivity over paternalism. The trajectory of the Indigenous movement also shows that a uniform theory of social change is nonexistent; local context should be taken into account when outlining a path towards social change.

## Introduction

In Ecuador, the most active opponents to the neoliberal state and capitalist institutions are Indigenous peoples, developing one of the most successful social movements in Latin America since the late 1980s. I trace the development of Indigenous identity to show its indispensability for building an unfaltering opposition and viable alternative to capitalist institutions, delineating why those who are interested in imagining and pursuing anti-neoliberal and anti-capitalist resistance should pay close attention to this particular movement. Socialist movements, which typically attempt to imbue people with class consciousness as a means of building resistance against capitalist institutions, often neglect the context-specific factors and processes that engender successful opposition. As the debate over the true motor or dynamic of social change continues among socialists today, I attempt to show that there is no one blueprint for social change. As a result, class is an insufficient entry point for understanding how conflict arises given the way in which culturally specific processes may become the motor for social change.

The first section describes the specific conditions in Ecuador occasioning Indigenous power in the 1990s, concentrating on Indigenous ties with the socialist and communist movements. Central to that rise is the Confederation of Indigenous Nationalities of Ecuador (CONAIE), the principal broad-based grassroots organization that represents the various Indigenous identities in Ecuador. CONAIE has played a key role in determining the trajectory of the Indigenous movement. The second section examines Indigenous resistance, predominantly fostered by CONAIE, from the 1990 uprising to Rafael Correa's presidential election, describing how mobilization captured national attention. The third section catechizes how the cosmovision of Indigenous peoples shapes their political demands, concentrating on a social philosophy known as *Buen Vivir* that has been used by

the Indigenous movement to oppose Correa's administration. During this time, CONAIE helped to introduce the concept of Buen Vivir at the national level and spearheaded its incorporation into policy. Moreover, I compare the philosophical and political perspectives of the Ecuadorian Indigenous peoples and those of leftist movements to unveil the limitations of socialist thought. Lastly, the fourth section comprises two recent examples to illustrate the continued political power of the Indigenous movement: Indigenous communities halting a Chinese-funded mining project at the local level and CONAIE thwarting policies at the national level.

### **The Birth of a Movement in the 1990s: Deep-rooted Socialist Ties, the International Monetary Fund Policies, and the Creation of CONAIE**

In the twentieth century, Indigenous communities rarely spearheaded social movements that represented their identity or explicitly called for their own rights. Instead, political parties, churches, peasant unions, and revolutionaries were mostly responsible for rural organizing favoring Indigenous peoples (Yashar 1998, 23). Contrastly, Indigenous peoples trail-blazed the anti-neoliberal social movements in Ecuador of the 1990s that yielded momentous accomplishments for their communities (Petras and Veltmeyer 2010, 74). This may partially be because the 1990 uprising embodied years of coordination with allies who offered innovative organizing strategies that could be employed to protect Indigenous rights. When the Ecuadorian Socialist Party welcomed Indigenous leaders to its Congress in 1926, Indigenous activist leaders began coordinating with the socialist and communist parties. Key Indigenous organizations endorsed Socialist candidates, while Socialist leaders raised funds for Indigenous groups, provided them with legal assistance, and publicized their struggle. Meanwhile, the Ecuadorian state perceived Indigenous peoples as an obstacle to modernization because

they were participating in the traditional economy of the hacienda (i.e. large feudal estates). In response, socialist leaders incorporated Indigenous demands for the expropriation of hacienda lands into their platform.

In 1944, “a leftist-oriented strand of Indigenous activism” founded the Ecuadorian Federation of Indians (FEI), which officially represented Ecuadorian Indigenous peoples for the first time (Becker 2008, 12). Although the Communist Party of Ecuador supported FEI and shared organizing methods such as engaging in general strikes with Indigenous peoples, the FEI did not serve as a mouthpiece for the communist party. The Ecuadorian socialist and communist parties may have forged identity around class, some members did not brush away Indigenous needs (Pribilsky 2011, 191). The strand of the domestic leftist community in the 1920s that acknowledged the dynamics of intersectionality allowed for a collaborative, as opposed to a paternalistic, alliance with Indigenous peasant activists and did not prod them into erasing ethnic differences. Meanwhile, Indigenous activists ensconced their struggle in the overarching class struggle. Overall, the collaboration between Indigenous peoples and socialist allies “triggered a shift in Indigenous strategies from reacting to local and immediate forms of exploitation to addressing larger structural issues” (Becker 2008, 12).

When the socialist and communist parties veered their focus to non-Indigenous issues in the 1960s and 1970s, the FEI shifted its efforts from traditional wage issues to an agenda that was more tailored to Indigenous needs: agrarian reform. However, neoliberal state reforms reduced budgets for social services, agriculture, and economic programs. The Ecuadorian government removed restrictions on agricultural products in the mid-1980s and halted agrarian reform, imperiling both the material stability and political autonomy of Andean Indigenous communities. Although indebtedness, declining incomes, and land loss sparked rural organizing and protest, material uncer-



tainty did not solely characterize Indigenous resistance; land loss compromised the political autonomy of local communities, as “Land demands are the symbolic glue that enabled communities with diverse needs (including redistribution, titling, and territorial autonomy) to mobilize behind a common cause” (Yashar 1998, 36). Therefore, state-accepted austerity and structural packages ultimately led to the creation of the Confederation of Indigenous Nationalities (CONAIE) (Hanratty 1989). CONAIE took advantage of this symbolic glue, combining Andean calls for land redistribution with Amazonian calls for territorial autonomy.

Formed in 1986, CONAIE consolidated different Indigenous communities of the coast, sierra mountains, and jungle while recognizing these federations as different “nationalities.” At its first convention, 500 Indigenous representatives devised and acceded to a political agenda that combated International Monetary Fund policies, canceled Indigenous debt, froze consumer prices, and exempted tribes from land taxes. They also prioritized securing tribal land titles from the government, protection of archaeological sites, and investment in bilingual education (Mijeski and Beck, 1998, 3). Lastly, they called for the recognition of Ecuador as a plurinational state through a public declaration and Constitutional ratification. In the past, the government had promoted pluriculturalism, which merely embraced ethnic, cultural, and historical differences between Indigenous groups. Since the concept failed to stipulate political and legal rights to ancestral territory and separate lawmaking and government institutions, Indigenous activists could not substantially contribute to any political agenda at the time (Clark and Becker, 143). Therefore, the call for a plurinational state was more vigorous and “provided a metric that could be used to assess government proposals, develop specific programmatic initiatives, and take advantage of the rapidly changing political landscape” (Jameson 2011, 66).

## **The Resistance: Tracing Organizing Strategies and State Response**

The 1990 Indigenous uprising transcended electoral and patronage-based politics, successfully “connecting the dots of identity-based forms of resistance that are very localized” (Jameson 2011, 65). Blocking roads, Indigenous activists forced the central government to negotiate 16 demands, including the demand for a plurinational state. These accomplishments in the late 1990s were accredited to the efficacy of direct action rather than the broad economic program of the Indigenous movement. National protests actuated President Abdala Bucaram to step down in 1997. Similarly, in January 2000, the Indigenous polity governed substantial parts of Ecuador for the first time in retaliation for the detrimental impacts of dollarization of Ecuador’s economy and neoliberal reforms accepted by President Jamil Mahuad. CONAIE mobilized tens of thousands of people for a march on Quito, the capital of Ecuador, which culminated in the occupation of the Congress building and the formation of a short-lived junta, enabling the Indigenous movement to possess a voice and negotiate in the councils of government.

However, victories turned out to be temporary as CONAIE lacked a broad-based national coalition to preserve its power. With American help, the traditional political class reclaimed power and replaced Mahuad with his Vice President Gustavo Noboa, whose liberalization policies during his presidential term triggered nationwide demonstrations. The intensity of direct action once again led to negotiations between the government, CONAIE, and other organizations. Due to the efficacy of negotiating, CONAIE reshaped itself as a national interest group, but at the cost of becoming a political player at the national level, sacrificed some of its coherence by competing with numerous other special interest groups for the limited resources of the state. Nonetheless, the silver linings were initiating a national political strategy and establishing an

affiliated political party called Pachakutik that captured local and congressional seats in 2002. CONAIE eventually helped to elect Lucio Gutiérrez, the army colonel who partook in the short-lived junta in 2000, for president. Having like-minded individuals in the administration such as Nina Pacari and Luis Macas, the organization intended to maintain its autonomy while ensuring that their political demands were being heard at the highest level (Vanden 2003, 316). However, Gutiérrez shortly began to unveil a neoliberal agenda that undermined the Indigenous movement, which further lost credibility for putting Gutiérrez in power in the first place. Consequently, “the CONAIE needed to shore up its base, redefine its focus, reassess its strategies if it was to be a player in setting the economic policy of the country” (Jameson 2011, 68).

When Gutiérrez’s successor, Alfredo Palacio, inducted Rafael Correa as minister of the economy in 2005, CONAIE recognized an opportunity. Political support from Indigenous peoples actualized his presidency due to the harmony between the past stances of the Indigenous movement and Correa’s nationalistic and anti-free trade policies. “Correa’s call for a constituent assembly echoed a demand of the Indigenous movement from its earliest days and received its greatest support in Indigenous areas” (Jameson 2011, 69). Given these political alignments, CONAIE remodeled the Ecuadorian Constitution through the concept of *Buen Vivir*, an Indigenous philosophy that encapsulates a communal, ecological, and culturally sensitive worldview. The integration of *Buen Vivir* into the Constitution and other governmental programs was intended to strengthen the Indigenous movement, which could more effectively articulate their demands with familiarized language. This accomplishment was twofold. First, following the Indigenous uprising in the late 1990s and early 2000s, Marlon Santi, as President of the local organization of Sarayaku (and subsequently President of CONAIE), co-authored a manifesto with CONAIE to introduce *Buen Vivir* into the discourse of the

Indigenous movement in 2003 (Altmann 2014, 89). Second, the Indigenous movement helped to elect left-leaning officials who valued Indigenous knowledge and traditions that had been suppressed for centuries and hence supported the constitutional incorporation of Buen Vivir (Gudynas 2011, 442). The concept gained wide acceptance in 2007 and 2008, no longer affiliated with a few influential figures.

Despite the Indigenous population ostensibly securing a seat at the table, Correa began to shift to the right and appeal to key business federations (Webber 2011, 11). Tensions heightened between the government and the Indigenous movement by the end of 2009 and into 2010, the year that sociologist Maria Unda designates as “a project of capitalist modernization confronting social movements.” These tensions culminated on June 5th, 2010 when Ecuador was holding a presidential summit of the Bolivarian Alliance for the Peoples Of Our America (ALBA) in the majority-Kichwa, Andean city of Otavalo. Although the summit concerned Indigenous and Afro-Latin American communities within ALBA countries, CONAIE did not receive an invitation. As a result, an estimated 3,000 people gathered for a march in the city organized by CONAIE, which also instituted a parallel Plurinational Parliament in the streets and plazas. Police arrested many protesters and placed charges of terrorism and sabotage against key Indigenous leaders (Webber 2011, 11).

The majority of protests were contesting Chinese-funded extractivist projects. When the Ecuadorian government and multinational corporations were discussing large-scale mining projects behind closed doors in 2011, CONAIE braced for impact. Correa’s neoliberal development plans were insinuating escalated state repression and ideological defamation of popular movements. CONAIE Youth Coordinator Severino Sharupi identified the organization’s strategic priorities as reviving rank and file capacities, fortifying relations between a wide range of Indigenous allies, and instituting new organizational

structures of resistance at the national level between all sectors of the popular movement (Webber 2011, 13). Sharupi said, “From CONAIE we can offer support to the broader movement, drawing from our experiences. We want to move beyond thinking merely of this government, because governments are transitory. They are merely pieces in the game that capitalism uses for its own ends. Our job is longer term, a process of political and ideological formation of the popular sectors—of the Indigenous sector, of all popular sectors.”

Time after time, left-wing political candidates promised progressive policies catering to Indigenous needs, garnering their support to secure votes, but once in power betrayed their constituents in pursuit of neoliberal policies. However, the Indigenous movement has been capable of combating this pattern by emphasizing their vision while constructing and promulgating their agenda. Although CONAIE has succumbed to some compromise to retain their national influence on policy, they have promoted Indigenous vision and social philosophy as a means of self-sustenance.

### **How Vision Shapes Resistance: Buen Vivir and the Plurinational State**

Through mass mobilization, Indigenous cosmovision and imagination have been realized into policy, as exemplified by the Buen Vivir-inspired Constitution. Buen Vivir defines well-being in the context of community and its environmental situation, extending rights to nature itself. Ergo, it challenges the neoliberal-bound tenant of individualism while rejecting the reduction of life to economic values and overwhelming commoditization (Gudynas 2011, 445). The English translation “good living” does not fully capture the conceptual richness of Buen Vivir, which challenges the Western development model and expands satisfaction beyond obtaining basic needs and access to services. Carlos Viteri Gualinga, an Amazonian Kichwa, posits that there is no Indigenous conception of

development but rather “a holistic vision about what should be the objective or the mission of all human effort, that consists of looking for and creating the material and spiritual conditions in order to construct and maintain the ‘good life’” (Altmann 2014, 87). An outlook such as Buen Vivir offers humanity a potential alternative framework that resolves the capitalist contradiction of ceaseless productivity and economic growth. Many socialist activists and politicians cling to the oxymoron of green or sustainable development as an answer to the climate crisis. Meanwhile, Indigenous activists challenge the ideology of growth, which is compatible with the thinking of degrowth advocates who seek to downscale affluent economies and material flows as the only way out of the climate crisis. Moreover, Buen Vivir is “plural” because different cultures, histories, and ecological contexts wield varied interpretations among Indigenous groups in Latin America (Gudynas 2011, 444). Given this fluidity, Buen Vivir is not a yearning for Andean pre-colonial times but rather a dynamic concept that undergoes constant transformation (Gudynas 2011, 443). It thus rejects essentialist and structuralist thinking that uphold grand metanarratives.

A well-known approach to Buen Vivir is the Ecuadorian concept of Sumak Kawsay, the Kichwa term for a fulfilled life in a community of diverse individuals and natures. The Pluralist Sumak Kawsay—representing a singular way to frame Buen Vivir—presents Sumak Kawsay as the creation of a Plurinational State (while the concept of the plurinational state is also a condition for the process of Sumak Kawsay). Since the creation of CONAIE, plurinationalism has been the cornerstone of their political project (Bressa Florentin 2017, 124). In 1994, CONAIE developed “the Integral Humanist principle in the interrelation Man-Nature-Society”, which became the central pillar of its struggle for “The construction of the new Plurinational Society” (Altmann 2014, 85). Despite concerns about the survival of Indigenous resistance given the absence of a coherent anti-capitalist alternative, Economist Kenneth

Jameson attributes the constant advocacy of the plurinational state, which has operated as an intrinsic demand for the Indigenous movement since 1990, to the persistent national relevance of the Indigenous movement in Ecuador (Jameson 2011, 63). “CONAIE not only supported the transformation of Indigenous consciousness but also provided a mechanism for the movement to protect itself intoeconomic policy debates. It articulated positions that were agreed upon in participatory assemblies and then expressed in the arena of public debate. This process continues today” (Jameson 2011, 65). In short, the Indigenous movement has employed the plurinational concept to assume a principled and non-traditional position that challenges dominant political and economic stances.

Although the Indigenous movement helped to elect Rafael Correa, who in turn attempted to undermine Buen Vivir, the pluralist principle of Sumak Kawsay was instrumentalized by the Indigenous movement as a means to integrate itself into the political arena and oppose his administration. In January 2008, CONAIE emphasized the recognition of Ecuador as a plurinational state during its third congress and approved a 43-point program that mirrored the 1994 political project. Moreover, it called for “maintaining the Indigenous movement’s independence from the state,” which evinced that CONAIE has learned from their past mistake of losing their vision at the expense of partisan politics. In March of that year, Indigenous peoples supported the delivery of a manifesto to the president and the assembly president that was framed as a Constitution and spotlighted calls for a plurinational state, Indigenous control over territories, and acceptance of Indigenous languages as official ones (Jameson 2011, 69). The concept of the Plurinational state, along with references to Andes goddess Pachamama, was incorporated into the Constitution. The assembly also officialized Quichua and Shuar languages.

Along with the Pluralist Sumak Kawsay, the Indigenous movement has made use of Deep Buen Vivir, another way to

frame Buen Vivir that accentuates ecology, the rights of nature, and post-development. The rights of nature can only be satisfied by supplanting capitalist structures with communitarian and small-scale projects that can guarantee an environmentally sensitive use of natural resources as well as the participation of people (Bressa Florentin 2017, 134). Therefore, Buen Vivir could be interpreted as local substantive projects rather than solely a spiritual theoretical alternative framework for Western development. For example, in 2003, an Amazonian filial of CONAIE challenged petroleum production in their territory and demanded that their territory be recognized as a “zone of biological, cultural and historical interest for the country and humanity, which is to be protected in different degrees defined by ecological characteristics and traditional usage of the land” (Altmann 2014, 88). The Indigenous movement also applied this framing of Buen Vivir when the Correa administration engaged in neo-extractivist activities and multinational corporatism.

It would be misleading to characterize Plural Sumak Kawsay and Deep Buen Vivir as socialist. Western-influenced formulations of socialism still abide by modernist principles, whereas Indigenous communities do not accept the linear development model. Western formulations also lack environmental and intercultural components. Moreover, CONAIE’s long-term strategy of pioneering the vision of a plurinational state, as opposed to a coherent anti-capitalist program, distinguishes it from any leftist movement. As seen during Correa’s administration, the Indigenous movement utilizes the concept as a baseline for deciphering their policy stances, which conveys how crafting a vision is indispensable for advancing social change. Indigenous activists know when to reject a reform by identifying whether that it is done for sake of reform or works toward their ideal vision. The Indigenous movement offers a profound alternative to neoliberal and capitalist institutions that esteems an enriched, spiritual way of life. Working towards a



vision explicates the need for positive politics; promulgating an anti-capitalist vision is insufficient because it is strictly focused on absence rather than presence.

Not only does the Indigenous movement recognize issues that traditional socialist frameworks do not account for, but its deep imagination for an ideal future composed of Sumak Kawsay has served as the main engine for political struggle. Class processes do not necessarily need to drive this engine or explain how we see the world; organizing predominantly around ethnic identity has been sufficient for initiating economic change, leading to mobilizations against mining concessions and oil operations since these projects contradict the principles of Sumak Kawsay. This trajectory of resistance in Ecuador corroborates that there is no singular or universal theory for social change because the form of resistance depends on local social contexts. Furthermore, Sumak Kawsay offers us a way of thinking that can solve existential crises. For instance, reprioritizing values such as community, spirituality, and cultural identity can help combat the zombification of capitalism. The Indigenous opposition to modernity and development is also critical for properly addressing the climate crisis, as degrowth is the only way out.

### **Recent Events: Identity at the Heart of Struggle**

To this day, the Indigenous movement continues to be the key player in advancing social change in Ecuador while maintaining a core activism position. CONAIE and its affiliates have upheld the collective rights of Indigenous communities from the local to national scale. In 2019, the Ecuadorian government intended for predominantly Chinese-invested mining in Rio Blanco, the mountains of southern Ecuador, to improve economic growth. When jobs did not materialize, local Indigenous groups began to protest and ultimately halted a Chinese-owned gold mine. Lauro Sigcha, the chair of the Federation of Indigenous and Peasant Organisations (FOA) in Azuay

province explains, “The villagers found that combining protests with broader social and environmental issues was more effective. So they looked for people with protest experience, and found [ourselves] and the lawyer, Yaku Sacha” (Hui 2019). The FOA is a part of Ecuador’s Confederation of Peoples of Kichwa Nationality (ECUARUNARI), which coordinates with other Indigenous groups in the Amazon and on the coast via CONAIE.

Since many common surnames in Rio Blanco are Kichwa and local records proved that Kichwa people have lived in the area in the past, the villagers were able to find their own Indigenous group, take legal action, and join FOA. Their identity as Indigenous became a significant factor in protests against the Chinese mining projects, and they secured support from anti-mining and environmentalists activists in other areas. On June 5th, judge Paul Serrano decided that the lack of prior consultation with locals violated the Constitution and the UN Declaration of the Rights of Indigenous Peoples, temporarily terminating all mining activity. Later in August, the court rejected an appeal to resume operations. For the first time in history, a court in Ecuador ruled in favor of Indigenous communities, creating a precedent that encourages similar lawsuits (such as a recent one against the Chinese-invested Mirador copper mine).

As its affiliates empower local groups, CONAIE has concentrated on policy-making and political integration at the national level. In October 2019, President Lenin Moreno, Correa’s successor, announced a plan to implement numerous IMF austerity measures, including an exorbitant increase in fuel prices, a cut in government spending, the privatization of social services and infrastructure, and the lay-off of 23,000 state employees. These measures were all related to an IMF loan of \$4.2 billion, which was brokered earlier in January 2019. Indigenous groups were never consulted on these measures, which fomented eleven days of widespread protests in Quito that are known as the “Great Uprising.”

After negotiations between the Moreno Administration and the Indigenous movement predominantly represented by CONAIE, Moreno announced the cancelation of Decree 883 and other measures (Otto 2020). In 2020, CONAIE filed a lawsuit against President Lenin Moreno and other officials for alleged crimes against humanity, referring to the Great Uprising that resulted in 10 deaths (Al Jazeera 2020).

Such recent events illustrate how the Indigenous movement organizes in a strategic way that accommodates the intersection of movements while preserving the Indigenous vision. The way in which Indigenous communities coordinate with environmentalist activists substantiates that there is more than one entry point for social change and social movements are stronger when intersectional. The discourse between Indigenous principles and environmental efforts had coalesced into an opposition that the state could no longer ignore. Moreover, when the Indigenous movement was willing to sacrifice its vision for the sake of reform in the early 2000s, this deprecated its potency. In these recent examples, social change has been predominantly driven by cultural identity, which demonstrates the need for context-specific solutions rather than a standardized blueprint for social change.

## **Conclusion**

Tracing the Ecuadorian Indigenous movement shows that no social movement develops in isolation. If a skein of the socialist movement in the 1920s had not acknowledged other dynamics in conjunction with class analysis, then such a powerful Indigenous movement seen today may have not been fully realized. Although organizing tactics of socialist parties in Ecuador were adopted by and empowered the Indigenous movement, these strategies do not suffice in articulating Indigenous needs. Since the Ecuadorian Communist and Socialist Parties drifted away from Indigenous issues throughout the 1960s and 1970s, neglecting the unique struggles confronting Indigenous

people, Indigenous peoples branched out from traditional wage issues to advance their own agenda. Indigenous approaches challenge Western values, a lack of rigorous developmental alternatives, faith in progress, and materialist perspectives within the socialist tradition.

Time after time, political candidates have presented themselves as leftist advocates for the Indigenous cause but diminished Indigenous power with state force and coordinated with the International Monetary Fund or Chinese companies after their inauguration. Although many victories of the Indigenous movement were co-opted and hegemonized by political leaders and upper classes, CONAIE has exercised the unique imagination and social principles of the various Indigenous peoples to determine which battles are to be fought and how to fight them. CONAIE has pushed the state to assume a counter-hegemonic stance on the global sphere and continues to reverse policies and agreements that impair Indigenous livelihood to this day. At the heart of these successes are the vision of a plurinational state, integral to challenging the Correa administration, and the ecological components of Buen Vivir, which serve as the foundation for halting mining and other extractive activities. A firm vision is essential for fostering social change, granting activists the ability to identify non-reformist reforms from reformist ones. Additionally, the Indigenous vision can offer us new frameworks for addressing urgent issues, such as degrowth as the solution to the climate crisis, that traditional socialist frameworks fail to envisage.

The Indigenous movement is even at the forefront of issues impacting non-Indigenous communities. This is because the Indigenous movement has successfully incorporated broader social movements into its struggle while connecting them to the Indigenous identity. This movement shows that class identity is not the only entry point for realizing economic justice. Class struggle must be understood alongside other social categorizations that it shares an interconnected nature

with. Therefore, identifying and tackling an issue strictly through a class analysis cannot fully address the issue. Since the Indigenous movement in Ecuador is one of the most prominent oppositions to neoliberalism and capitalist institutions in the Latin American region, this should inspire leftist movements and networks around the world to situate marginalized voices at the forefront of their work. Generic socialist or other leftist frameworks cannot be implemented anywhere; modes of organizing must be informed by local contexts, histories, and cultures. Leftist networks, especially majority-white ones, should actively consider the intersection of race, class, gender, and other social constructs when developing context-specific strategies to combat oppression and injustice.

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