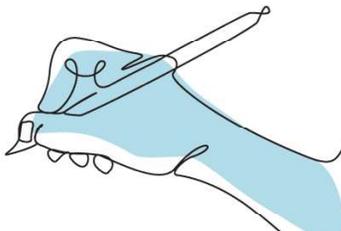




*prized*

*writing*



*2020+2021*

*Prized Writing*

2020 – 2021

Volume 32

*Prized Writing 2020–2021*

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IN  
MEMORIAM

JAMES McELROY  
1952–2021

# Contents

Editor's Introduction	iv
Editors of <i>Prized Writing</i>	vi
Honorable Mention	viii
Why Not You?	
MAAHUM SHAHAB.....	1
Querying QAnon: Cultural Reconstructions of Political Power	
MANASA GOGINENI.....	10
A Look Back at Prop. 15	
MARKUS KAEPPPELI.....	26
Side Effects of the Second X: The Rare Mood Disorder of Premenstrual Dysphoria	
SAMANTHA SWANK.....	34
Green	
JENNIFER HEATH.....	46
Home (Not) Free: An Evaluation of the Relationship Between Housing Costs and California State University (CSU) Graduation Rates	
EMMA TOLLIVER.....	56
Granma: More Than a Boat	
MARIA COLLAZO.....	69
The Grapevine Compromise	
FELICITY BARRON.....	79

Forced Sterilizations in ICE: How the Legacy of Eugenics Still Continues Today	
REBECCA BIHN-WALLACE.....	89
The Forgotten War Story of French Women: Analysis of First World War Literature and First-Hand Accounts	
MARIANA VALDEZ JIMENEZ.....	100
The Reader in the Rye	
GABRIEL BELLUE.....	114
Una Platica Entre Famila, But Make It Mental Health	
MARIBEL ORTEGA.....	119
The Economics of Desire in Christina Rossetti's "Goblin Market"	
AMANDA ALBRECHT.....	128
Reflections of Her	
KAITLYN KUI.....	138
It's All In The Wrist	
CAITLYN ORTIZ.....	147
Hideous Green Knights Sleep Monstrously: A Night of Debate in Davis	
ELI ELSTER.....	153
“Our Ancestors Have Gone Through This Before”: COVID-19 and It's Disproportionate Consequences in Indigenous Communities	
ANNALIESE DIVNEY.....	161
California's Vaccine Rollout Presents Barriers for Disabled People	
DANIEL ERENSTEIN.....	171

Open Source Medicine: Lessons in Innovation From the Software Industry

XANDER GULDMAN.....183

Addressing Thyroid Cancer Overdiagnosis with Diagnostic Changes and Individualized Treatments

LUCAS HALLMAN.....190

S O Y B E A N (*Glycine max*): “The Mighty Yellow Bean” – Analysis and Review

ALEXANDER SAKA.....199

Capsid Morphologies and Predominant Morphotypes in Viruses of Halophilic and Thermophilic Archaea

EESHA GUPTA.....211

A Review of *Staphylococcus aureus* Antibiotic Resistance: Geographical, Molecular, and Evolutionary Patterns in Recent Years

ROGER CHRISTOPHER HSIEH.....224

Low-Grade Appendiceal Mucinous Neoplasms Mimicking Ovarian Adnexal Masses: A Case Report

RAVINDER SINGH.....235

Cover art by Darlene Atizado Langit

## Editor's Introduction

When it came time to think of this year's cover, I wanted something that felt representative of the remote learning experience COVID-19 thrust upon our campus community this past year. I soon realized this was a daunting task, though; how do you capture the solitude and isolation brought about by a global pandemic while also celebrating the twenty-four impressive undergraduate authors whose pieces are included in this anthology? Thankfully, Darlene Atizado Langit's single-line rendering of the writing process did just that. Beginning with an idea that's turned into an essay and subsequently published in our volume—being read by a masked individual, I might add—Darlene's art captures the unflappable, continuous excellence UC Davis students exhibited during the 2020–2021 academic year. Although social distancing may have kept us away from some of the notorious campus landmarks depicted on the back cover, the nearly four hundred submissions we received to *Prized Writing* this year prove that we are still the same UC Davis community.

As with the last thirty-one volumes, this edition of *Prized Writing* represents an interdisciplinary collection of documents written by undergraduates over the last year. While some speak to contemporary political, social justice, and even pandemic-related issues, others highlight the timelessness of one's own story or personal experience. Ranging in topics from medicine to history to soybeans to “hideous green knights,” the featured essays illustrate an array of genres written for classes from across campus. They showcase the diversity of our student body and the course material they're engaging with, and we hope faculty are able to use them as teaching tools for their future students.

Just like past editions, this volume of *Prized Writing* relied on the support and participation of a number of different people. We are only able to publish this anthology because UC Davis students continually submit their work to share with the public; to them we owe a great deal of thanks. I'd also like to thank our authors for their time and attention during the editorial process, as well as their instructors, who graciously provided the introductory comment that accompanies each essay.

I don't think it's an exaggeration to say this volume of *Prized Writing* wouldn't be what it is without the extraordinary dedication of my Assistant Editor, Amara Deis. From start to finish, through more obstacles than either of us would have expected, Amara has worked diligently to encourage submissions, maintain an active social media presence, work

with contributors, revive our “where are they now” section of the website, and rewrite, reorganize, and reimagine more of our behind-the-scenes documents than I can enumerate. During an academic year that felt inundated with change, Amara’s quick thinking and willingness to take on any task was the consistency that kept our ship afloat. Her mark on *Prized Writing* will be felt by Assistant Editors and Editors for years to come.

Similarly, our judges were especially appreciated this year as we turned what would normally be in-person scoring sessions into virtual ones. Many thanks to Agnes Stark, Amy Goodman-Bide, Andrea Ross, Cassie Hemstrom, Erika I-Tremblay, Greg Miller, Karma Waltonen, Nate Williams, and Sophia Jin for your patience throughout the process.

I am grateful for the support and assistance *Prized Writing* receives from the University Writing Program (UWP), in particular, Director Dana Ferris (Director), Anita Rodriguez, Darla Tafoya, Jasvir Mann, Kevin Bryant, Melissa Lovejoy, and Vicki Higby Sweeney. A special thanks to UWP’s webmaster, Elliot Pollard, who not only helped us in maintaining our *Prized Writing* website but who also provided vital support for our new online judging process.

*Prized Writing* is also fortunate to have the continued institutional support of Gary May (Chancellor), Mary Croughan (Provost and Executive Vice Chancellor), Cynthia Carter Ching (Vice Provost and Dean for Undergraduate Education), and Ari Kelman (Dean of the College of Letters and Sciences).

I’d also like to express my thanks for the advice and assistance I received from Terry Flemming with Repro Graphics, Morgan Liu with the UC Davis Bookstore, and Sarah Meredith (Director of CARE).

One final note: the *Prized Writing* community lost one of our own this year with the passing of former editor James “Jim” McElroy. As well as being a Continuing Lecturer with the UWP, Jim was *Prized Writing*’s first solo editor, and it was under him that the anthology endeavored to include both “the essay” and “technical writing,” a decision that has left a lasting impression on the publication. This only pales in comparison to the impression he’s left on his fellow UWP colleagues, who repeatedly remember his stories of his Irish upbringing and fondness for birding. It is his memory that we dedicate this issue of *Prized Writing*.

—Jillian Azevedo,  
Continuing Lecturer, University Writing Program

# Editors of Prized Writing: 1989–2021

\* \* \* \*

Vol. 1 (1989–1990): Eric Schroeder & Kathy Dixon

Vol. 2 (1990–1991): Eric Schroeder, Marlene Clarke, & Kathy Dixon

Vol. 3 (1991–1992): Eric Schroeder, Marlene Clarke, & Kathy Dixon

Vol. 4 (1992–1993): Marlene Clarke, Kathy Dixon, Jan Probst, Sondra Reid, Eric Schroeder, James Steinke, & Jayne Walker

Vol. 5 (1993–1994): John Boe, Marlene Clarke, Kathy Dixon, Sondra Reid, & Eric Schroeder

Vol. 6 (1994–1995): Gary Goodman with Cynthia Bates, Pamela Demory, Aliko Dragona, Lara Gary, Donald Johns, James McElroy, Sondra Reid, & Jayne Walker

Vol. 7 (1995–1996): Gary Goodman with Cynthia Bates, Elizabeth Davis, Pamela Demory, Aliko Dragona, Lara Gary, Paula Harrington, Donald Johns, James McElroy, Sondra Reid, Raquel Scherr, & Jayne Walker

Vol. 8 (1996–1997): Gary Goodman with Cynthia Bates, Elizabeth Davis, Pamela Demory, Aliko Dragona, Lara Gary, Donald Johns, James McElroy, Raquel Scherr, & Jayne Walker

Vol. 9 (1997–1998): James McElroy

Vol. 10 (1998–1999): James McElroy

Vol. 11 (1999–2000): James McElroy

Vol. 12 (2000–2001): Eric Schroeder

*Prized Writing 2020–2021*

Vol. 13 (2001–2002): Eric Schroeder

Vol. 14 (2002–2003): Eric Schroeder

Vol. 15 (2003–2004): Eric Schroeder

Vol. 16 (2004–2005): Pamela Demory

Vol. 17 (2005–2006): Pamela Demory

Vol. 18 (2006–2007): Pamela Demory

Vol. 19 (2007–2008): Pamela Demory

Vol. 20 (2008–2009): Pamela Demory

Vol. 21 (2009–2010): Pamela Demory

Vol. 22 (2010–2011): Amy Clarke

Vol. 23 (2011–2012): Karma Waltonen

Vol. 24 (2012–2013): Karma Waltonen

Vol. 25 (2013–2014): Karma Waltonen

Vol. 26 (2014–2015): Amy Clarke

Vol. 27 (2015–2016): Amy Clarke

Vol. 28 (2016–2017): Gregory Miller

Vol. 29 (2017–2018): Gregory Miller

Vol. 30 (2018–2019): Gregory Miller

Vol. 31 (2019–2020): Gregory Miller

Vol. 32 (2020–2021): Jillian Azevedo

# Honorable Mention

ANNELLE M. GARCIA, "PUT MY PEOPLE IN THE HISTORY BOOKS: THE  
NECESSITY OF ETHNIC STUDIES CURRICULUMS"

CRYSTANI MICHELLE FREEMAN, "DISCOVERING SELF IN BLACK NAMES"

EMMA LONSTRUP, "THE USE OF BIRDS AS A WEST NILE VIRUS  
SURVEILLANCE TOOL"

EVA K CLUBB, "LANGUAGE LEARNING IS STIMULATING OUR BRAINS  
(LITERALLY)"

MARIA YANIRA GALVAN, "LA LOTERÍA DE LA LUCHA"

HAISHAN HUANG, "SILENCED TONGUE"

JUSTIN PHILLIPS, "MYSTERY MONOLITHS: A PHILOSOPHICAL SOLUTION  
TO INSTITUTIONAL MISREPRESENTATION AND GENTRIFICATION"

MINA BEDOGNE, "GRAY WOLF ESA DELISTING CONTROVERSY"

SHANNON REILLY, "TYPOLOGY IS HUMAN NATURE"

## Why Not You?

MAAHUM SHAHAB



---

*WRITER'S COMMENT: Our prompt was to discuss a time we may have encountered a culture vastly different than our own. When I first read the assignment, I didn't know that I'd end up bearing some of my most personal feelings in a vulnerable account about my own heritage. Even now, my stomach churns at the thought of somebody reading my words and conflating harmful social systems with some of the deepest parts of my identity. I also recognize, however, that to stay silent about those who suffer most under these systems out of such fear hinders communities from making genuine, substantial progress. It is also true that progress is underway. I see it in the way young Pakistani women are actively combating sexism through social media, or the way women are demanding respect in everyday spaces. It is clear that more and more Pakistanis are standing up and joining the fight against misogyny in all of its ugly forms. Nevertheless, recounting and sharing these experiences and thoughts is necessary so that when we fight, we fight for all affected—not just those who can afford the fight.*

*INSTRUCTOR'S COMMENT: In the first assignment for UWP 102D: Writing in International Relations, students can write a traditional analysis essay or a reflective essay about experiencing a culture different from your own, using a former Prized Writing winning essay as a model: Rosa Klein-Baer's "For the Lost in Translation." Most students are content to write a traditional essay, but Maahum was more than ready for this challenge. Her past summers challenged her to see beyond the stereotypes of two disparate worlds and to wonder what her life might have been if she were raised in the land of her ancestors, as part of a different social class. As we worked on the draft, we began to*

*realize that the essay would go beyond my narrow page limit, because Maahum needed more room to beautifully express her wider view of the world.*

—*Karma Waltonen, University Writing Program*

**T**he scent of soil was different there. Something about it just made it more earthy and natural than what I was used to. I sat there, giggling with my cousins, ice cream dripping onto my bare feet, as we soaked up the hot Pakistani sunlight on those black marble doorsteps in their front yard. We were all sticky and wet from both the humidity that enveloped us like a big hug and the sweat from having just finished a soccer—or as they insisted, football—game with the neighbors.

Coming back home was never fun. The ache that would sit in the back of my throat each time we'd finally land back at the San Francisco International Airport would linger on for days, and then reappear months later whenever I found myself to be stuck in, what I considered to be, a horribly American reality of routine, work, and school. I would long to be back in Pakistan, wanting to relive the summers where I could just walk with a group of kids to the corner markets and get whatever my nine-year-old heart desired. I'd miss the late nights on balconies, the exhilaration of meeting other children on the streets and immediately launching into games, and the showers of love and affection from all the relatives that I'd only get to receive in snippets. Despite how much my parents tried to preserve culture, it was hard to recreate those experiences in the boring California suburbs.

## **Scarves and Blurred Lines**

We tended to visit Pakistan every three years. The intervals don't seem drastic until you realize that no one prepared you for how different things would be when you jumped in age from nine to twelve.

I'd never been as aware of my body as I was that summer. It was the first time my dad ever commented on anything I wore—he didn't do it before the trip and stopped as soon as we reached our layover on the way back. But that summer, I was confused and bothered by the way he'd follow me around the house and tell me to wear a scarf over my regular clothes. Somehow, sheer fabric would make all the difference in how people perceived me. He pointed out that all the women in Pakistan

wore scarves, or *dupattas*, across their chests or on their shoulders out of “respect.”

I didn’t understand whom I was respecting. I wore it anyway.

I was familiar with the Islamic concept of modesty, but it hadn’t occurred to me that an accessory, regardless of whether it really “covered” anything or not, could make me seem more modest. It was because of this *dupatta* dilemma that I began to comprehend (as best as a twelve year old could) the difference between culture and religion. The false equating of one to the other was most clear when my dad didn’t feel the need to comment on my clothing anywhere else, even though religion applies across all borders; even at that age, I knew that meant he wasn’t actually doing so for religious reasons. It was the very textbook definition of blurred lines; nowhere in any scripture did Islamic law or theology dictate that all women should carry *dupattas* at all times, including in their own homes and around their own families. Modesty for both men and women is encouraged, just like prayer or fasting is—that is, no person has the right or authority to force another to practice these forms of worship, but they do exist as spiritual guidelines. However, those spiritual guidelines all come with reason. If you’re sick or elderly, you don’t need to fast during Ramadan; if you’re financially underprivileged, you’re exempt from performing Hajj (pilgrimage); if you’re around your own family, you don’t need to wear concealing clothing. Why would you?

Whoever created Pakistani culture certainly did not get that memo. In their own homes, women are generally expected to hide themselves away, constantly vigilant over the way they dress, sit, lie down, and even sleep. Pajama pants are a complete disgrace, and this was a shock to twelve-year-old me. For some reason, they are unacceptable for Pakistani women to walk around in within their homes. To this day, I’m baffled by this reality.

“Ammi,” I sometimes tease my mom when packing for our trips, perplexed by the reaction I know is coming, “what would you do if I wore PJs around your parents’ house?”

“*Khabardar*,” she’d warn with a stern, disapproving face. *Watch it.*

Of course, she’s never offered a logical explanation for why they’re so taboo any time I’ve pressed her about it. She empathizes, confused as to why she herself sees them as dirty. But she doesn’t have an answer.

I’m thankful that I grasped the stark differences between culture and religion as early as then. Had I conflated Pakistani traditions with Islam, I would’ve let go of what is now the dearest part of my identity: being Muslim.

I came back home that summer confused, but still attached to the memories I had made and looking forward to the next trip.

## The Streets

During the next trip we took in 2017, at the age of sixteen, I was gawked at for the first time. The streets of big cities like Rawalpindi gave me a reason to cling on to my *dupatta*, no matter how impractical it seemed.

“Yeah, I know it’s really weird,” my dad acknowledged when I first realized it aloud. “In American culture, when a child is staring, you tell them, ‘stop, that’s rude.’ But here, it’s just not considered rude. It’s just a normal thing.”

His explanation helped me worry less about random stares I’d get from the women and children around me, but it didn’t do anything to ease my discomfort about the men.

The men’s stares were different, often easing into sly, creepy grins when I’d meet their gazes. The raging feminist in me loathed being the one who’d have to break eye contact, but not doing so also meant they won—it meant provoking them further. There was no winning. You either let them stare, or you played into some game they enjoyed.

That summer, I was hyper aware of the eyes on me. My cousins must have realized the change too, because they would follow me everywhere, to every little corner of every market, their eyes constantly darting around to watch our surroundings. I felt powerless, and as much as I wanted to scream at them for acting like I needed protection, the sad reality was that I did need it. The only thing that usually warded off unwanted gawking was other men.

The worst instance of the gawking was while we were driving around the congested roads of Lahore, and I was seated by the window, eagerly trying to take in all of my surroundings. Cars honked all around us, the air was full of smog, and the heat clung heavy to the two families stuffed into the tiny sedan we were in. Road lanes and traffic rules mere suggestions in Pakistan, inches away from my car door were multiple cars and motorcycles.

I must’ve absentmindedly let my eyes rest on the man who was sitting on the back of a motorcycle, because I didn’t realize that he’d started grinning back at me, peering into the car window. He started making eyes and raising his eyebrows. I grew frustrated. Here I was, in a car full of family and relatives, and this man—who looked like he was in

his late twenties—considered it to be the perfect time to stare. As soon as our car started moving, I flashed up my middle finger, not breaking eye contact.

I didn't expect what came next: he patted his friend's back, and motioned with his hand toward me. They started following our car, he developed an angry expression, and then he turned his head to stare more obviously. My heart skipped a beat, and I shrunk back into the car, silently praying that we'd lose them without me having to tell anyone about the silent interaction. I pretended absolutely nothing happened, and when I was finally brave enough to sneak a look outside, I was relieved to see they were gone. Shaken up, I told myself to be thankful that a little bit of staring was the worst I'd experienced.

*So many women have been through so much worse.*

## **Marriam**

It is common practice in Pakistan for average, middle-class families to hire domestic help, possible thanks to enormous wealth gaps, poverty conditions, and overall economic instability. I was used to meeting servants hired at either of my relatives' homes who'd wait on the families.

Adjusting to living with servants was always difficult. Besides the strange looks I'd get when washing my own dishes after every meal without much thought, there's also the deep sense of shame I felt letting someone else do my work. This I considered to be one of the few American traits that I was proud of: self-sufficiency.

On that same trip of 2017, I met Kashaf, a live-in maid that my uncle's family had newly hired. I got along with her really well, and she had an older sister aura, which made it easy to be around her without feeling the awkwardness that I usually did. Although neither of us understood each other all too well (my broken Urdu was too slow; her dialect too fast), the bits we *were* able to exchange were always meaningful. I was surprised to know that she was Christian, and I figured that her religious experience could be similar to mine, seeing that we were both significant minorities in countries that were heavily influenced by the alternative religion. She also had two adorable daughters, ages one and three, whom I was fond of.

I mentioned all of this to my mom, telling her we should gift something to the three of them before we left Pakistan. I told her about how great it was to have a kind friend around the house when my cousins

were busy with school and work.

She chuckled and nodded, “You used to say the exact same thing about Marriam, remember her?”

*Marriam.* I’d totally forgotten about her. The memories from trips we’d taken years before stirred in my mind. Marriam was the daughter of a maid who would come to clean my grandparents’ house, and we were the same age. When we were six, she and I would get to play together after she finished helping her mother around the house. She was the only friend I had during summers in that house full of adults, and I admired her so much. I used to be insanely jealous of the colorful red long skirt she’d wear and the way it’d spread out like a princess’s dress when she twirled.

Excited at the memory, I exclaimed, “Oh yeah! We should visit next time we’re in Kahuta!”

My mom’s smile faded almost immediately. Her face flashed a strange, concerned look, and she turned away, attempting to change the subject.

“What?” I asked, “what is it?”

“Nothing. What do you want to eat—”

I was getting really confused. Was my mom, a devout Muslim woman who valued service to humanity so deeply, being elitist? Was she really upset that I wanted to know how Marriam was?

“—What’s wrong? You don’t like Marriam?”

“No, it’s not that—”

“—Then what is it? What happened to her?”

My mom looked at me, hesitated, and then started in a regretful tone, “Those people married the poor girl off when she was thirteen.” She searched my face for a trace of understanding, looking embarrassed.

I understood right then that she was embarrassed on behalf of the people who subscribed to a cultural system that she’d grown up around and was familiar with. In an attempt to preserve her culture, she had constantly tried to shield me from the stark differences that did exist between my world and the one she’d known her whole life. She was afraid of her own kid generalizing all of the culture which was an integral part of her. I was familiar with the feeling, often finding myself afraid to acknowledge the shortcomings of Pakistani culture to my peers in an attempt to not further perpetuate the stereotypes they already held.

Although I recognized her dilemma, I couldn’t mask my shock. Up

until that point, I'd lived in a bubble of seemingly equal opportunities and liberation.

"These people, the villagers, they are just like that," she explained. "When you two were little, I asked Marriam's mom which school she wanted to send her daughter to. She scoffed in my face and said, 'What good would ever come from sending *kudiyān* [chicks] to school?'"

My mom shook her head, sighing.

"I was so angry. I told her she should try to send her to school. It's these people—they are just uneducated and backward."

I implored her as to what my grandparents did about it, only to receive the answer I already knew: nothing could be done. Who were they supposed to call? The cops? What good would Pakistan's for-profit, broken policing system accomplish?

"They fired her mother, but there's not much else," she answered.

At this moment, the realities that I'd only read about in books and saw on the news settled under my nose. When I was a child, there was absolutely no difference between myself and Marriam. She might as well have been any other child I met out on the playground at recess. To realize that our life paths had diverged so loudly revealed to me my own privilege.

That night, as I tried to sleep on a thin mattress under the meek wind of a ceiling fan, I felt heavy with all the newfound discomfort I had navigating through Pakistan. I reflected on having to be constantly vigilant and fearful of my surroundings, and on the differences in how I was treated now versus when I was younger. On top of that, learning of the sinister fate of someone who I'd shared the same roof with was enough for that heaviness to resemble suffocation.

I finally admitted it to myself: I didn't want to be here anymore. A part of me broke off that day. I turned into my pillow and sobbed as quietly as I could, hating myself for feeling this way.

## **Saima**

The next day, I woke up ready with a plan: I was going to teach Kashaf's three-year-old daughter, Saima, the alphabet. I nagged at my younger cousin for some pens and paper, and brought Saima and her little sister inside the house from the front yard.

Saima's eyes immediately lit up when I handed them to her, and together we began tracing the letter "S."

I spelled out her name, pointed to her, and said in broken Urdu, “That’s your name, see! You try it!” She chirped up, excited and curious. Her mom watched, beaming from the kitchen.

Over the next few days, it grew more difficult to continue teaching them. My aunt didn’t want the girls inside the house because they got the seats dirty—their clothes were always old and soiled, and they carried an odor of sweat and dirt. I was stubborn, so I insisted that I’d continue to teach them outside on the marble steps. But dealing with a three-year-old’s attention span, the blazing hot sunlight, and the language barriers between us made it challenging at best.

By the end of my trip, I barely got through a few letters with her, but I didn’t care. My goal was to inspire Saima somehow, to make her perceive education as fun, exciting, and cool. I wanted her to grow up to fight for her education. Maybe Marriam could’ve done the same.

## **Back Again**

The most recent trip I had was this past summer. I arrived at my grandparents’ home from the airport in the early hours of the morning. To deal with the jetlag, my mom, aunt, and I decided to go for a walk.

I took in the scent of soil, the wetness of the air, and the sleepy orange hue on the horizon. For a moment, I felt at peace, excited for the days that were to come ahead.

Out of nowhere, a car came roaring toward us. A group of young men hollered out mortifying remarks, whooping and laughing. My mom yanked me back onto the sidewalk just in time for them to miss me by a foot, and then they sped off into the night.

Not three hours after I’d arrived from the airport, I had been catcalled for the first time in my life. That too, in one of the most secure and affluent neighborhoods in Pakistan. To say I was enraged is an understatement.

Later, I got to reunite with Saima. I clamored excitedly up the driveway to see her, only to find that she hadn’t grown much bigger than she was at three. Now, at seven, she rested her new infant brother on her hip, bobbing him up and down. I began to greet her, but she caught her little sister playing in the mud from the corner of her eye, and hurried over to scold her, all while soothing the baby in her arms. When I was seven, I didn’t know how to hold a baby.

I found out that she never started school.

“I tried to get her to,” my aunt insisted, “but she’s just not interested. What are we supposed to do?”

As she grows, Saima continues to take on more responsibility as her mother’s right-hand helper. As the eldest daughter, she’s needed to take care of her siblings and so many other things while her parents are working to put food on the table. Paying for a school that Saima would actually enjoy would actively hurt the family’s financial situation.

In the midst of all of this, it is Saima who is hurt the most. She will likely grow up to be trapped into an endless cycle of poverty. Dependency—on her parents and then her husband—will be her means to survival, putting her at a significantly high risk of abuse and violence.

## **Fading Glitter**

Over the years, the glitter of Pakistan faded away. As I prepare for another trip this summer, I have to keep reminding myself to keep everything that I’ve learned from my anthropology, sociology, and history classes at the forefront of my mind. I know that as someone who’s only been given an Orientalist and imperialist view on the Eastern world, I need to make a conscious effort to work against inequality ingrained into culture while still balancing cultural relativism as an ideal. Still, a sense of wariness and trepidation washes over me as I pack my *dupattas* into my carry-on.

The worst part about all of these feelings is that they don’t make me any more American. It feels that I don’t belong anywhere. I’m like a fish being taken out of the expansive ocean and put into a glass bowl. I yearn for a sense of appreciation for the wet and warm lands that my ancestors inhabited for centuries, the same land in which so many of them are buried—only to find myself somewhere far away, dry and foreign, unsure of who my descendants will be.

The scent of soil there is different.

When I picture the black marble steps in the front yard, I no longer see myself. I see Saima sitting there with matted hair and a baby not much smaller than herself in her lap. She sits alone, hours on end. Her skin glistens under the sweltering Pakistani sun and suffocating humidity. A few flies buzz around her, occasionally landing on the baby’s head, but she doesn’t bother swatting them away. She quietly looks straight ahead, and her piercing eyes scream at me: *why not you?*

# Querying QAnon: Cultural Reconstructions of Political Power: An Ethnographic Interpretation of the Conspiracy Community



MANASA GOGINENI

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*WRITER'S COMMENT: For my senior honors thesis, I elected to combine my academic interests in political science and anthropology with a research-based ethnography of the QAnon conspiracy phenomenon. In this excerpt, I explore why people have identified with QAnon between 2017 and 2021 by placing the conspiracy's current events and cosmologies in conversation with evergreen theories about how power manifests in America's cultural imagination. Drawing upon landmark and contemporary claims from sociocultural anthropology and political science, and captured experiences from participants in the conspiracy community, I speculate that QAnon articulates Americans' fundamental frustration with their political institutions through its processes of creative assembly. In other words, QAnon is about time travel, cannibalism, and child-preying cabals to its proponents—yet QAnon's particular imagery and macro-level behavior vocalizes people's distrust of the American political system, as the increasingly powerful mediating forces of globalization, capitalism, and social media amplify collective expectations for the government while introducing new avenues for knowledge formulation and political participation. My findings imply that conspiracy communities like QAnon's, without certain structural changes in national policy or realignment of information technologies, will continue to rapidly scale.*

*EDITOR'S COMMENT: Through a combination of current events and cultural theories, Manasa crafts a thought-provoking essay that seeks to explain the origin and appeal of QAnon. Beginning with the Capital*

*attack and the jarring images Americans associate with that event, she details how the anti-establishment, conspiracy theorist group has gained traction and captured part of the modern American zeitgeist. Instead of overgeneralizing its supporters, she demonstrates the surprisingly relatable reasons that motivate people to join QAnon while at the same time highlighting the wide spectrum of beliefs amongst its proponents. She does this especially well when recounting her interviews, detailing everything from her initial contact with a subject to their mannerisms on the Zoom call. By weaving these together with QAnon’s anti-party politics ideas and relevant academic scholarship, Manasa pieces together a skillfully written, unbiased narrative of a group that has deeper roots in American culture than many would otherwise guess.*

—Jillian Azevedo, University Writing Program

## Meet QAnon

Jacob Angeli strolls into the Senate chamber, American flag and megaphone in hand, and sits in the Vice President’s seat. He tells remaining rioters that, unlike Mike Pence, they are “f\*cking patriots” and asks one—whose red “Make America Great Again” hat pops against his camouflage jumpsuit—to take his picture (Mogelson, 2021). A half-masked policeman watches from twenty feet away and waits for the iPhone shot. As Angeli stands tall behind velvet drapes, his six-inch bullhorns zoom into focus for the camera; they perch on each side of an oversized, fur headdress stretching from his American-flag-painted face to his bare, Norse-symbol tattooed chest. The patterns on Angeli’s body combine their cultural histories, articulating a new interpretation of patriotism that may be less skin-deep than imagined.

Angeli’s decision to protest without a shirt, while at the same time wearing gloves and a fur hat for the Washington D.C. winter, makes his tattoos especially conspicuous. Tom Birkett, Old English scholar at the University College Cork, later identified a selection of them: the Othala runic letter, which symbolizes “inherited land” to White supremacist groups in Europe and the United States; a valknut image of Viking stones, which these groups have been co-opting to represent their belief in a violent struggle; and a Sunwheel, which the Anti-Defamation League has already listed as a Nazi-appropriated symbol for an idealized Aryan

heritage (Birkett, 2021). These symbols reinvent mythology for White supremacy, suggesting that forces outside of human understanding determine and dictate what certain people deserve. When Angeli stormed the Capitol in January 2021, along with thousands of others looking to overturn the 2020 presidential election outcome, his rhetoric raised a similar idea: that land is defined by its secret cultural history and ancestry, which only insiders can access. Days after the Capitol attack, Angeli told *The Washington Post* that, centuries ago, the secret society of Freemasons designed Washington D.C. around an ancient practice of aligning landmarks to accentuate the Earth's magnetic field. Angeli said the attack was an "evolution in consciousness," and when he marched toward the building he therefore felt "the special intensity that comes from alignment that put him in tune with supernatural forces . . . [the rioters] were actually affecting the quantum realm" (Kunkle, 2021). Angeli accordingly calls himself the QAnon Shaman.

QAnon is an assemblage of internet theories; its central tenet is that a secretive, elite group of Satan worshippers are orchestrating an international pedophile ring and scheming to undermine political systems' integrity. QAnon anticipates "The Great Awakening" to follow as Donald Trump, with help from self-proclaimed digital soldiers, turns the hidden battle against evil. The dispersed community's canonical goal is for the U.S. military to arrest these pedophiles, execute them, and establish martial law. This imminent event would result in global salvation and peace. QAnon emerged on the heels of Pizzagate, a debunked theory connecting Democratic Party leaders and restaurants with an alleged child-trafficking ring that a then-anonymous Twitter user launched just before the 2016 election. Exactly one year later, another anonymous user identifying as "Q," claiming to possess insider information, continued the conspiracy on the message-board website 4Chan. Since October 2017, Q has posted nearly 5,000 cryptic clues for its ever-compounding follower base to decipher (Aliapoulios et al., 2021). QAnon's official genesis dates to that first "Q drop," but the events it alleges date to well before 2016.

In our video interview, Julian\*, who closely identified with QAnon between 2017 and 2019, told me, "It's just been there forever . . . . Most people believe this is a war between good and evil that goes back thousands of years, right, like they literally believe this, that the cabal has been in control of humanity. For the entirety of human existence until Donald Trump." QAnon's early "hidden human history" incorporates ties



other Q followers continue to share their own theories on alternative corners of the internet: alleged cabal members include Hollywood elites like Ellen DeGeneres, Oprah Winfrey, and Anderson Cooper, who takes his transgressions a step further by eating children and working as a spy for the Central Intelligence Agency; industrial bleach is a miracle COVID-19 cure, yet COVID-19 is also an inside plot from nefarious government agents; Donald Trump is saving America with a time-viewing machine passed down from Nikola Tesla; Trump is also a regular time traveler who once dated his daughter Ivanka; the film *The Matrix* is actually a documentary; underground military bases are being prepared for interplanetary war; and everyone is a clone of someone else. QAnon's fragmentation does create varying levels of support among Q followers per each of its seemingly endless theories. Fragmentation, however, appears to be a strength. Because QAnon's design is amorphous, unlike prior national conspiracy webs surrounding presidential assassinations or moon-landing attempts with strict sets of "facts" from singular sources of news, it is able to capture greater segments of the American population, who choose from QAnon's buffet of mundane to seemingly science fiction theories to find their truth.

## Theoretical Theories about Theories

Some early social theorists would argue these science fiction ties are incompatible with the United States' economic output and capitalist structure. Roughly one hundred years ago, Max Weber hypothesized that advanced societies had become "disenchanted" along with the spread of capitalism and secular hyperrationality; supernatural beliefs fell away in this transition to modernization, as they no longer met a functional purpose (Weber et al., 2020). Around the same time, Émile Durkheim claimed that in "primitive," clan-like societies, people are highly religious and share a collective conscious of ideas, while in advanced, industrialized societies with an increased division of labor, people are secular and often hold more independent ideas (Durkheim, 1933/1984). While Weber and Durkheim suggested that societies walk a temporal path to modernity via industrialization, abandoning now-incompatible traditions of magic and religion along the way, others trouble this framework. E.E. Evans-Pritchard responded soon after with his ethnography of the Azande tribe in North Africa. Evans-Pritchard suggested that beliefs in magic, or witchcraft and sorcery, do serve a functional purpose to explain chains

of events and structure society (Evans-Pritchard, 1976). Peter Geschiere adds that ideas and practices regarding witchcraft are actually modern, malleable, and intertwined with a state's political power; its ritual beliefs and practices reflect contemporary society and arise from it (Geschiere, 2000).

Jean and John Comaroff agree with Geschiere, arguing that appeals to enchantment, which value religion and culture, are actually intensified by contemporary processes of capitalism, globalization, and postcoloniality. The Comaroffs attribute rural South Africa's rapid growth in witchcraft-related ritual murder between the 1980s and 1990s, in which people accused wealthy elites of diverting the flow of production for selfish reasons via magical, monstrous mechanisms, to millennial capitalism—essentially capitalism around the year 2000's spirit of messianic, enchanted possibilities—and a culture of neoliberal globalization (Comraoff & Comraoff 1999, 2000). QAnon similarly alleges that elites extract wealth and life from poor and vulnerable people's bodies using hidden, underhanded power. And despite being rooted in the highly industrialized United States, QAnon is anything but hyperrational (for the scope of this study, I will define hyperrational as the categorical rejection of invisible forces' ability to influence visible, physical things, including people). QAnon's grounding in non-scientific, clan-like beliefs, which Weber and Durkheim tied to "primitive" societies, dissolves Weber and Durkheim's imagined boundaries between magic and modernity, suggesting that one begets the other. The conspiracy community presumes that the war between good and evil has persisted over thousands of years, but also that it must urgently be addressed now that the cabal has more powers and technologies at their disposal. One popular theory alleges that elites harvest a hormone called adrenochrome from children—it oxidizes when they experience fear—and use this physical compound for Satanic rituals or sell it on the black market, even though mainstream medical scholarship claims adrenochrome's chemical properties are unremarkable (National Center for Biotechnology Information, 2021). And QAnon's collective vision of violent extraction from less powerful members of society reassembles itself across individual theories.

Richard Hofstadter claims the United States has a uniquely fantastical, paranoid style of politics that has persisted, in forms of suspicious discontent like the anti-Masonic movement and McCarthyism, since the country's formation. Hofstadter says this recurrent public

phenomenon is significant because ordinary people partake in shared paranoia (Hofstadter, 1964). Michael Glennon suggests there is in fact a “double government,” with hidden bureaucrats working behind the scenes to influence public policies those elected implement—such secret actors weaken the United States’ national security under the illusion of democracy (1964/2016). If these invisible, unchecked networks of people do exist—and their existence is impossible to prove or disprove beyond a reasonable doubt—the act of identifying and removing them would be difficult. QAnon may therefore be identifying structural issues within American institutions through metaphors of witchcraft and time travel that more lucidly speak to the system’s unseen dynamics.

### **Interlude: Defining a Digital Ethnography**

Decades ago, Argentinian writer Jorge Luis Borges published a short story titled “The Ethnographer,” which follows an American college student named Fred. At his professor’s direction, Fred goes to live with a Native American tribe for two years as a participant-observer, with a mission to learn their secret doctrine through immersion and retell it in his research; but when he returns to his city, he pledges not to spill the secret, saying it would be difficult to communicate in words regardless. Fred tells his professor, “I learned something out there that I can’t express . . . science, our science, seems mere frivolity to me now” (Borges, 1969/973). QAnon does involve secret entanglements, and people who identify with them find it difficult to systemically translate its meaning and structure to outsiders within the frameworks of “science” they are familiar with. I began to face a similar challenge to Fred as a student ethnographer and QAnon outsider, as I find the conspiracy phenomenon difficult to represent with the words I know. I also question whether its “secrets” are mine to share. At the same time, as I acquainted myself with its community in meaningful, even intimate conversations, I drew connections between QAnon and more enduring ways of thinking about United States politics. I believe these should be shared. My semi-structured interviews allowed me to frame discussions around my research interests while allowing for adaptations based on participant responses and our evolving understanding of one another.

### **Case Study: Clark, Capitalism, and Conspiracy Checks**

Clark is a middle-aged man who lives in a major coastal metropolitan city and describes himself as a “proud conspiracy theorist” and Twitter

influencer. I found his Twitter profile after reading his response to an account that aggregates right-leaning alternative news on United States politics and, upon noticing how active he appeared to be in the QAnon community, approached him with a description of my study. Clark replied that he was interested in my research, but had to do his “due diligence” beforehand since “most people reaching out about this sorta thing do Not [*sic*] have good intentions.” A few minutes later, Clark added that he believes I am honest—he said my involvement with a non-partisan political magazine confirmed I would respect different opinions—and was excited to provide me with “the perspective of deplorable conspiracy theorists that the mainstream media is obsessed with.” We met over a Zoom call the following Tuesday morning for an interview. After I went over the verbal consent script confirming risks should his identity be compromised, Clark, who wore a plain red t-shirt half-illuminated by a warm overhead lamp, leaned back in his desk and said, “I’m not really afraid of any possible repercussions, just because I don’t feel like I’m doing anything wrong, just exercising free speech. Yeah. You know the laws should be on the people’s side. So it’s kind of getting scary about this day and age . . . it feels like our rights are being eroded.” As I jotted down notes to supplement my audio transcript, I noticed that Clark was exceedingly thorough in his answers and measured in his articulation of them—he would often backtrack, see my pen at work, and ask if I had questions before continuing.

Clark told me that he has always identified as anti-establishment. He added that although he voted for President Barack Obama twice and was a registered Democrat, he would describe himself as apolitical until the 2016 election season. “I don’t know if it was just coincidental timing in my life but, like, something caught my eye about Trump,” Clark said. “He shocked everyone, and I was kind of digging it. I was like, I know he was from *The Apprentice*, whatever, but this guy just really shoots from the hip, says what he means, and now has brought to light what I feel are a lot of problems and issues that people are uncomfortable talking about.” Clark became involved with Pizzagate on Twitter when it first emerged, and commuted by train to attend a protest in Washington D.C. in early 2017, which he described as the first time he was truly passionate about something. He explained his QAnon involvement as a natural transition from the ideas he explored with Pizzagate, and that he has been closely integrated with its community since the week of Q’s first drop.

Clark said that although the Federal Reserve was established over a hundred years ago and people are made to think it is a component of the U.S. Government, it actually is a “private banking institution with unilateral power. . . . it’s a weapon of control, and that’s why I’m on the Q bandwagon.” He explained that the elites who run the world are specifically a small group of powerful international bankers in the shadow war, who enslave the population through debt, especially interest rates. The Federal Reserve is a mechanism for that enslavement. In their analysis of postcolonial South Africa, the Comaroffs describe an occult economy that operates beneath the surface. They write that “Capitalism has an effervescent new spirit—a magical, neo-Protestant zeitgeist—welling up close to its core” in which current conditions disrupt “grand narratives of progress and development,” conspicuously diverting the flow of production toward elites’ selfish needs (Comaroff & Comaroff, 1999). Essentially, the Comaroffs argue claims of witchcraft are new, rather than traditional, forms of consciousness that work to express discontent with modernity. Clark’s interpretation of powerful actors amassing fortune through invisible means—debt enslavement under the Federal Reserve’s guide—alludes to a similar sense of discontent with modernity and deformities that the Comaroffs describe. He also speaks to this spirit’s influence on the core of the United States economy, which was never necessarily fair, but is now more pertinent and mediated by questionable institutions like the Federal Reserve.

At the same time, I wonder if deploying “discontent” in this context captures or detracts from Clark’s feelings about economic institutions if, prior to 2016, he was fairly apolitical. Perhaps that election period’s national unrest and tension actually revitalized grander, even re-enchanted narratives for progressing American politics for the public—and for Clark, as he found a self-described passion that frustrates yet also adds additional dimension to his life. “I’ve always liked thrillers and mysteries, and this is almost like a real life thriller-mystery thing. . . . it was fun. I had a full time job . . . and I definitely was on Twitter too much, like at work. Definitely obsessive, obsessive, obsessiveness for a little bit,” he said. I imagine that in his form of “thriller-mystery,” Clark could play the superhero detective, protecting Americans from the cabal and investigating their crimes alongside the QAnon White Hat government insiders. If 2016 launched arguably unprecedented rhetoric from a presidential campaign, from Trump’s “Grab ’em by the pussy” to Clinton’s

“Basket of deplorables,” to vastly divergent economic plans informed by right-wing populism or inclusive capitalism to Bernie Sanders’ supposed socialism, to threats of ill-intentioned interference from Clinton’s email handling investigation and foreign hackers on the tail end of Obama’s two terms in office, an overarching story to tie all of those seemingly disparate events concerning powerful people into a single all-encompassing, grand meaning would form a reasonable societal response. This story would certainly be concerned with money and power.

On America’s economy, Clark said, “Everything’s a rich man’s trick. It’s a very cynical way of looking at things, but it’s all just an illusion, and we could be so much happier. I don’t think we’ve really reached our potential, like, as a human race.” Clark clarified that rich does not necessarily mean elite. He cited Elon Musk’s promotion of cryptocurrencies like Bitcoin as a good-willed attempt to draw Americans away from the government’s corrupted financial institutions. Clark himself is uninterested in the stock market, calling it an “old, outdated, manipulated system” and he saw the recent rise in GameStop’s stock as proof that the elites can be subverted with collective effort. Clark then quickly backtracked, saying, “I’m not an economic expert, for sure, even though [I was] an accounting major.” Yet Clark’s theories are well developed within QAnon’s canonical rejection of the Federal Reserve. I found it interesting how he de-emphasized his position of knowledge creation within the conspiracy, juxtaposing his clear influencer status with his expressed lack of confidence in the exact claims he makes.

As he expanded on the conspiracy’s consequences, his voice softened and he glanced above the camera. “We have too much faith in our financial system, too much faith in our media, like we don’t really ask enough questions. How come?” he asked. “So many people in the world are starving, you know? How come 1 percent of the population owns, like, 90 percent of the wealth in the world? People just kind of dismiss it as this crazy conspiracy. . . . I have to get that idea out there in the public consciousness that actually there is, you know, a shadow war.” Clark’s emphasis on disseminating the truth with the options he has, from his Twitter following to his conversation with me—in which he spent nearly two hours describing his journey with QAnon for fair representation in my writing, and then kindly asked me to send any follow-up questions—reflects a compelling search for legitimacy. He wants to be heard by people outside of QAnon’s community who are

willing to listen, including me, urgently, before the window to fight the cabal narrows. “The ultimate goal is full disclosure of the truth, not the artificial matrix reality,” summarized Clark.

## **What about the “I’s” in Institutions?**

Hofstadter might say that the existing economic institutions are permissible, or at least not guilty of massive conspiracy, and that Clark’s theories are a new reiteration of “The Paranoid Style in American Politics,” which is largely concerned with dispossession (Hofstadter, 1964). I find that Clark’s dialogue reflected feelings of dispossession. In other words, bad actors were controlling America to deprive him of the wealth and happiness he deserved. While he attributed this takeover to the cabal, he never claimed other parties were innocent—and his references to Trump’s and QAnon’s anti-intellectual and anti-establishment underpinnings, in accordance with Hofstadter’s reasoning of capitalism and real American virtues being undermined by cosmopolitans and communistic schemes, suggest that the latter motivated him and ignited his interest in politics. Yet I argue that QAnon theories like the ones Clark described are not a symptom of baseless paranoia but rather a recognition of inequality that does exist in the United States, which has ample resources to provide food and shelter for each resident but does not. Clark’s articulation of dispossession suggests that ordinary Americans never had much in the first place and that fairly distributing resources is important not just for him but for other peoples’ wellbeing, too.

His theory uses the Federal Reserve and other economic institutions to describe his feeling of powerlessness amid these greater structures, which, outside of his predicted Great Awakening, may have more complicated barriers to reform like necessitated, yet perhaps time-consuming, checks and balances between branches of the federal government, frequent transitions between political parties that change the branches’ priorities and stall legislation, and the United States’ long history of low minimum wages that may advance wealth inequality and poverty. Perhaps Clark’s narrative asks for the same outcome which all of these barriers’ removal could produce, but does so without drawing in the massive stakeholders and time that prevent rapid and effective United States policy changes. It would be near impossible, for example, to pass comprehensive policy that ameliorates hunger for each of the estimated 42 million Americans experiencing food security during the pandemic (Feeding America,

2021) and deploy its requisite infrastructure nationwide in days, if not months. Alternatively, Clark assumes that the stock market's hidden, elite buyers and sellers scheme to possess more than their fair share of capital at the expense of honest Americans. Yet, unless there was a unilateral, extreme reason that would convince the government or remaining public to abandon the stock market—like Satan-worshippers using it to profit from children—I would anticipate its dissolution, let alone reform, to be unlikely within Clark's lifetime.

During our conversation, Clark emphasized that, although he is certain Biden is a deep-state actor and Trump a hero, he dislikes both of their parties. He believes each includes cabal members. His main challenges with the Democratic Party are its interest in higher taxes, which he feels go to the elites' and the military, instead of meaningful programs to benefit regular citizens, and its associated governors, including Gavin Newsom and Andrew Cuomo, the latter of whom he expects to be investigated soon for intentionally raising COVID-19 numbers in New York nursing homes to kill the elderly. Clark said, "There's enough money and resources for everyone to live a comfortable life. . . . no one should have to suffer. . . . overpopulation is a myth." Although the Democrats' official 2020 platform relates a similar interest in "building a stronger, fairer economy" through reducing generational wage gaps and affirming housing as a human right (Democratic National Committee, 2020), these intentions seem irrelevant to Clark's interpretation of United States politics because he fundamentally does not think the current system is capable of meeting these expectations of equality.

Clark's comments suggest that if secret elites are manipulating the government from its inside, national policy priorities will serve little to no purpose until the Great Awakening removes their influence. Even if new legislation passes to control the stock market, for example, how could Americans trust the law's integrity? The access point to redistribute wealth for everyone to meet their basic needs, as I interpret his argument, must therefore come from forces outside of the traditional U.S. political system, like communities of digital QAnon soldiers that support White Hats' fight against the cabal. Clark's perspective on the U.S. government's checks and balances failing to perform their role and his distrust in the government's ability to maintain basic democracy mirrors Glennon's own theory in *National Security and Double Government*. Glennon writes that "If governmental assurances concerning everything from

vaccine and food safety to the fairness of stock-market regulation and IRS Investigations become widely suspect . . . daily life would become more difficult” (1964/2016). Clark experiences these difficulties with American institutions in his daily life. He suspects the government cannot ensure any semblance of fairness given its mediation by deep-state actors. He feels that these institutions are not only broken, but also highly malicious. “It’s America,” he told me. “You build it up from the inside, then you destroy it.”

## **Quashing Quackery?**

I interviewed over twenty people on the record for this study—current and former Q followers, their family members, QAnon-beat journalists, and conspiracy focused professors. Before initiating these conversations in February, I hypothesized that the cabal’s metaphorical form could help Q followers draw upon more hidden feelings of frustration and being undermined by the government; this psychic unearthing facilitated by QAnon would provide relief in a psychological process, expelling frustration and remotivating themselves for political participation. I conclude that QAnon certainly does meaningful things for individuals who endorse its theories, but while that endorsement may flow from similar factors—I posit they include beliefs about American institutions being not only ineffective but also openly incongruent with people’s real priorities, in their distribution of wealth, two-party system of polarization, and mediation by the mainstream media’s interests—QAnon’s impact remains highly individual, from enabling cathartic political expression to building community in times of need. I use “impact” instead of “purpose” because I believe the phenomenon does not necessarily exist to serve a purpose within society, including reforming the political system, especially given its links to violence. Its commentary could be productive, but I argue government bodies and non-QAnon followers should consider its creative assembly instead: How do its events come together in uncanny patterns to produce hard-lined theories about the world’s invisible ontologies? I believe QAnon articulates individuals’ frustration with United States politics. This frustration was not previously hidden, and then resurfaced by QAnon—it was open, perhaps ignored, and its bearers are reimagining it with alternate words to seek legitimate acknowledgement of it, whether that arrives through anarchy or, as QAnon canon calls for, a military state. Perhaps it was

difficult to find a meaningful solution for it within the logistical confines of our political structures. I anticipate that efforts at de-radicalization and anti-conspiracy movements will prove ineffective unless greater policy changes are made to troubleshoot narratives of dispossession and uncertainty within the United States' greater history.

\* Interviewees' names were changed for anonymity.

## References

- Aliapoulios, M., Papasavva, A., Ballard, C., DeCristofaro, E., Stringhini, G., Zannettou, S., & Blackburn, J. (2021). *The Gospel According to Q: Understanding the QAnon Conspiracy from the Perspective of Canonical Information*. Cornell University. [arxiv.org/pdf/2101.08750.pdf](https://arxiv.org/pdf/2101.08750.pdf)
- Birkett, T. (2021, January 13). *The history behind 'QAnon shaman' Jake Angeli's far-right tattoos*. Quartz. [qz.com/1956272/what-qanon-shaman-jake-angelis-tattoos-mean/](https://qz.com/1956272/what-qanon-shaman-jake-angelis-tattoos-mean/)
- Borges, J. L. (1974). *The Ethnographer* (Hurley, A., Trans.). In *Collected Fictions*. Viking, 1998. (Original work published 1969). [www.wtf.tw/ref/borges.html](http://www.wtf.tw/ref/borges.html)
- Comaroff, J., & Comaroff, J. L. (1999). Occult economies and the violence of abstraction: Notes from the South African postcolony. *American Ethnologist*, 26(2), 279–303. [doi.org/10.1525/ae.1999.26.2.279](https://doi.org/10.1525/ae.1999.26.2.279)
- Comaroff, J., & Comaroff, J. L. (2001). *Millennial Capitalism and the Culture of Neoliberalism*. Duke University Press. [doi.org/10.2307/j.ctv11cw8vz](https://doi.org/10.2307/j.ctv11cw8vz)

- Democratic National Committee. (2020, August 28). *Building a Stronger, Fairer Economy*. democrats.org/where-we-stand/party-platform/building-a-stronger-fairer-economy/
- Durkheim, É (1984). *The Division of Labor in Society* (W. D. Halls, Trans.). Free Press of Glencoe, Illinois. (Original work published 1933). fs2.american.edu/dfagel/www/Class%20Readings/Durkheim/Division%20Of%20Labor%20Final%20Version.pdf
- Dylan, L. M. (2018, July 7). *KEY TO THE Q-WEB* [Photograph]. Dylan Lois Monroe. www.dylanlouismonroe.com/q-web.html
- Evans-Pritchard, E. E. (1976). *Witchcraft, Oracles, and Magic Among the Azande*. Oxford University Press. monoskop.org/images/3/37/Evans\_Pritchard\_E\_E\_Witchcraft\_Oracles\_and\_Magic\_Among\_the\_Azande\_1976.pdf
- Feeding America (2021). *Hunger in America*. www.feedingamerica.org/hunger-in-america
- Fieldstadt, E. (2018, December 6). *Satanic statue erected in Illinois State Capitol with other holiday decorations*. NBC News. www.nbcnews.com/news/us-news/satanic-statue-erected-illinois-state-capitol-other-holiday-decorations-n944706
- Geschiere, P. (2000). *The Modernity of Witchcraft: Politics and the Occult in Postcolonial Africa*. University Press of Virginia.
- Glennon, M. J. (2016). *National Security and Double Government*. Oxford University Press. (Original work published 1964).
- Hellinger, D. C. (2019). *Conspiracies and Conspiracy Theories in the Age of Trump*. Palgrave Macmillan. DOI: 10.1007/978-3-319-98158-1
- Hofstadter, R. (1964, November). The Paranoid Style in American Politics. *Harper's Magazine*. harpers.org/archive/1964/11/the-paranoid-style-in-american-politics/
- Kunkle, F. (2021, January 10). Trump supporter in horns charged in Capitol riot. *The Washington Post*. www.washingtonpost.com/local/jacob-chansely-horn-qanon-capitol-riot/2021/01/09/5d3c2c96-52b9-11eb-bda4-615aaefd0555\_story.html
- Mogelson, L. (2021, January 17). A Reporter's Footage from Inside the Capitol Siege | The New Yorker [Video]. *The New Yorker*. YouTube. www.youtube.com/watch?v=270F8s5TEKY&t=448s

- National Center for Biotechnology Information (2021). *PubChem Compound Summary for CID 5898, Adrenochrome*. National Library of Medicine. [pubchem.ncbi.nlm.nih.gov/compound/Adrenochrome](https://pubchem.ncbi.nlm.nih.gov/compound/Adrenochrome).
- Q Alerts (2020). *Intelligence Drops* [Aggregated Q post Database]. [qalerts.app/](https://qalerts.app/)
- Sanders, T., & West, H. G. (Eds.). (2003). *Transparency and Conspiracy: Ethnographies of Suspicion in the New World Order*. Duke University Press.
- Weber, M., Roth, G., Wittich, C., & Fischeff, E. (1978). *Economy and Society: An Outline of Interpretive Sociology*. Berkeley: University of California Press. (Original work published 1922)
- Weber, M., Reitter, P., Wellmon, C., Searls, D., & Cesarini, C. F. (2020). *Charisma and Disenchantment: The Vocation Lectures*. New York Review of Books.
- West, H. G. (2007). *Ethnographic Sorcery*. University of Chicago Press.

# A Look Back at Prop. 15

MARKUS KAEPPELI



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*WRITER'S COMMENT: California is often seen as a liberal and progressive state. And yet, it is marked by a conservative history and undercurrent that continues to this day. So, when prompted by Professor Abramsky to write a feature article about California, I wanted to tell the story of one battle between California's liberal and conservative elements. I decided to write about Proposition 15 from the recent 2020 election, which embodied this conflict. The politics of California's "tax revolt" from the 1970s resurrected in 2020.*

*Through writing this article, I learned not only about the role that activist and special interest organizations play during elections, but also how to find and connect narratives through interviews and research. I sought to tell the behind-the-scenes story of a charged political battle and the people and organizations at its forefront.*

*INSTRUCTOR'S COMMENT: Marcus took a complex subject—an exploration of Proposition 15, the ultimately doomed electoral effort to modify Proposition 13 and change significant parts of California's tax system. The topic is important but quite hard to explore in a way that draws in a lay audience. That Marcus succeeds in this task is testament to his skill not only at analysis but also at humanizing stories and building up a sense of relevance for his readers. It's a tough skill to master, and Marcus has shown an admirable and mature ability to tell a political and economic story well. His work well merits publication in Prized Writing.*

*—Sasha Abramsky, University Writing Program*

**I**n an election as tumultuous and divisive as the 2020 election, California’s Proposition 15 still managed to be one of the most closely watched and hard-fought electoral battles of the season.

And despite the news cycle being dominated by present-day political issues such as the COVID-19 pandemic, the George Floyd summer protests, and the fallout of the Trump Presidency, Proposition 15 hearkened back to a seemingly bygone era of California politics—the tax revolt of the late 1970s.

To its proponents, Prop. 15 was a “fair and balanced reform that closed corporate property tax loopholes to reclaim nearly \$12 billion every year for schools and vital services for our communities,” wrote the Schools and Communities First Coalition in a policy brief. Meanwhile, to its opponents, it would have made “income inequality worse by driving up the costs for just about everything we need and use, like food, utilities, daycare, and health care,” as written by the Stop Higher Property Taxes and Save Prop. 13 campaign.

## **But What Exactly was Proposition 15?**

Proposition 15—or more accurately *The California Schools and Local Communities Funding Act of 2020*—was a citizen-initiated proposition and constitutional amendment in the 2020 general election for California. If passed, it would have required that industrial and commercial properties worth over 3 million dollars be taxed based on their current market value—instead of their original purchase price as delineated by Proposition 13. The measure would have increased funding for local governments, school districts, and community colleges, as well as supplement declining state income and sales taxes. In effect, Prop. 15 would have overturned major provisions of Proposition 13.

“This was the first attack in a long time directly at Prop. 13, directly trying to dismantle it,” said Susan Shelly, Vice President of Communications for the Howard Jarvis Taxpayers Association, a California-based nonprofit dedicated to the advancement of taxpayer rights and the protection of Proposition 13.

“If we lost Prop. 13 and properties were reassessed to market value, it would have been catastrophic for the Californian economy.”

## Harkening Back to the Tax Revolt

Proposition 13 was a monumental initiative measure from the 1970s. It restricted property taxes to 1 percent of a property's original purchase price and circumscribed the state of California's ability to pass new tax laws.

"It was passed at a time when homeowners were seeing their property taxes increase as their home values increased," said Ben Grieff, campaign director for Evolve California, a Bay Area nonprofit aiming to increase public school funding, "and so there was a populist movement to cap property taxes."

"People were freaking out," said Mrs. Shelly. "Howard Jarvis was an activist who was fighting to do something about this. He had others put Proposition 13 on the ballot."

Howard Jarvis and Paul Gann were the Republican political activists who authored Proposition 13 in 1978. Each the head of an anti-tax nonprofit—the United Organization of Taxpayers and People's Advocate Inc, respectively—they led a tax-cutting crusade and organized petition drives in Sacramento. On June 6, 1978, Prop. 13 passed. Over 65 percent of California voters voted in favor of it.

Ever since then, progressive activists in California have criticized the proposition for its impact on state and local governments, and for exacerbating inequality throughout the state. They charge that Proposition 13 created property tax loopholes for corporations that allow them to avoid paying their fair share of taxes.

"Prop. 13 is problematic because it froze in place inequalities. And not just in residential property, but also in commercial property," said Carol Goldberg, president of the League of Women Voters of California, a nonprofit that encourages the informed participation of women in politics.

The residential sector now pays the lion's share of property tax revenues for critical community services, at 71 percent, compared to the commercial sector at just 29 percent," said Tessa Callejo, senior program officer for the San Francisco Foundation, a nonprofit committed to advancing racial equity and economic inclusion in the Bay Area and the rest of California.

However, despite progressive critiques, Proposition 13 has since become a foundation in California politics—a so-called "third rail." In

2014, Governor Jerry Brown stated that the proposition was a “sacred doctrine that should never be questioned.”

“It’s sort of ingrained in this state that Prop. 13 is good and should never be touched,” said Mrs. Goldberg.

Proposition 15 would put that to the test.

## **This is the Story of Proposition 15**

### **Entering the Ballot**

Organizing a challenge to Proposition 13 began in 2014 with the creation of the Schools and Communities First Coalition.

“The roots of this came from studies done by Lenny Goldberg,” said Mrs. Goldberg. (Lenny Goldberg and Carol Goldberg are not related.)

Lenny Goldberg, former executive director of the California Tax Reform Association, has been involved with major tax legislation reform for the past twenty-five years. Beginning with a 1991 report, Mr. Goldberg has critiqued Proposition 13 extensively, writing that “a consistent shift of the property tax burden away from commercial/industrial/other property and toward residential property has occurred in virtually every county in the state.”

In 2014, the coalition, organized by LA-based nonprofit California Calls, explored the idea of property tax reform—conducting research and polling before the ballot measure was written.

“This came to our attention through other civic groups. There’s an umbrella organization called California Calls that is based in LA, but it has lots of member organizations,” said Mrs. Goldberg. “It was very collaborative.”

On December 15, 2017, representatives from the League of Women Voters of California, California Calls, and the Oakland Leadership Center filed a ballot initiative with the Attorney General’s Office. And on February 20, 2018, the motion became Initiative #17-0055.

Once successfully becoming a ballot initiative, #17-0055 would need at least 585,407 valid signatures to be added to the ballot for the next election. To accomplish this, the Schools and Communities First Coalition focused its efforts on community outreach and gathering signatures.

“We got petitions out there. We went out, talked it up, and solicited signatures. Everyone in the coalition did,” said Mrs. Goldberg.

She continues, “the campaign had a group of people that we called the speaker’s bureau. We took every opportunity at every invitation to come and talk about what this proposition was and what it would do.

However, activists faced an uphill battle. Proposition 13 was extremely popular when it passed and, by some measures, is still popular today. Yet, public opinion polls are inconclusive. A March 2018 poll of likely voters by the Public Policy Institute of California found that 53 percent supported policies like Proposition 15. In contrast, a September 2018 poll by the *Los Angeles Times* found that only 46 percent of eligible voters supported it.

“Proposition 13 is extremely popular and very important to protect California’s property owners. Prop. 13 would pass today,” asserts Mrs. Shelly.

“Any talk of it just sort of got people’s backs up,” said Mrs. Goldberg, “So there was a whole lot of just educating people about what it really was, and what it really did, and what its impact was in the long run.”

## **From Midterms to the Presidential Election**

Despite the success gathering signatures for the ballot initiative, on April 6, 2018, sponsors of Initiative #17-0055 announced that the initiative would be delayed until 2020.

“There was some rethinking and realizing that maybe what we wanted to do was get it on the presidential year because you have more voters turning out,” said Mrs. Goldberg. “Traditionally, the gubernatorial election doesn’t inspire a lot of turnout.”

The ballot initiative was later reintroduced on August 13, 2019, as Initiative #19-008 and was added to the election ballot on May 22, 2020. But this later ballot initiative would face unforeseen challenges.

## **COVID-19**

The 2020 election season was unprecedented in many ways. As a result of the COVID-19 pandemic and the widespread use of stay-at-home orders, campaigns had to become almost entirely online. Common tactics such as canvassing and rallies were abandoned completely in most states.

“There was going to be this huge ground campaign, which would be all of our coalition going out and knocking on doors, up and down in the

state,” said Mrs. Goldberg. “And that just didn’t happen. So, it got shifted to texting campaigns, phone campaigns.”

“When we aren’t able to get out and talk to people in communities across the state, then people are more receptive to the TV ads that they see,” said Mr. Grieff. “Generally, the opposition to this sort of progressive tax measure spends more than we do and spent more than we did on television ads.”

More so, coalition members argue that the pandemic allowed Proposition 15’s opponents to leverage COVID-19’s devastating impacts on small businesses as fuel against the proposition.

“It was about how much small businesses were being impacted by the pandemic, and that is 100 percent true,” said Mr. Grieff. “Problem is our opposition used that as a reason for voters not to support Proposition 15.”

## **The Opposition**

Early on in the process, taxpayer organizations like the Howard Jarvis Taxpayers Association that supported Proposition 13 didn’t directly oppose Prop. 15.

“We didn’t know when they were circulating petitions. We didn’t do advertising to oppose it at that stage,” Mrs. Shelly said.

However, once Proposition 15 qualified for the ballot, the opposition sprang into action.

“We did advertising, and we did countless interviews, and articles, and columns. And everything we could think to do, we did to explain to people what this really was,” said Mrs. Shelly.

## **The 2020 Election**

In the 2020 election on November 3, 51.97 percent of California voters voted against Proposition 15, with only 48.03 percent voting for it. Proposition 15 failed to pass.

“The groups that supported it worked for years and years and years to assemble the money and the coalition, but the voters are not on board with attacking Prop. 13,” said Mrs. Shelly.

However, the coalition remains hopeful. “I thought it was excellent—just wasn’t quite good enough,” said Mrs. Goldberg. “I think the concern about small businesses, which was hammered on relentlessly, was definitely a part of the problem.”

“So one thing that we did do that was positive was showing to the world and legislators in Sacramento that this is not the third rail of politics in California. If you make a good enough case, you can suggest and convince people that there are changes that need to be made.”

On the other hand, the opposition was not impressed with the progressive showing.

“This election was quite favorable for the interests that were supporting Prop. 15. They had a high turnout. They had an energized electorate. It was a strong Democratic result in California in the presidential election,” said Mrs. Shelly. “And yet, they couldn’t get a majority for it.”

## **The Future of Progressive Property Tax Reform**

With the COVID-19 pandemic on the verge of ending for the United States and an upcoming midterm election in 2022, the Schools and Communities First Coalition has stayed together, planning future campaigns.

I think there is some exploration—some thought—that we should build on the momentum,” said Mrs. Goldberg, “I don’t think anyone is giving up on the idea—because it’s a good one.”

“Our coalition is staying together,” said Mr. Grieff, “We are still committed to this and getting this on a future ballot.”

“We got really close the first time, and we’re ready to come back the second time and plan to win.”

## Works Cited

- Abd-Allah, Umar Faruq. *Islam and the Cultural Imperative*. Nawawi Foundation, 2004.
- Handlin, David P. *American Architecture*. Thames & Hudson, 2004.
- Kahera, Akel Ismail. *Deconstructing the American Mosque: Space, Gender, and Aesthetics*. University Of Texas Press, 2008.
- Mohamed, Besheer. “New Estimates Show U.S. Muslim Population Continues to Grow.” Pew Research Center. Pew Research Center, 3 Jan. 2018.
- Rabbat, Naseer. “What Is Islamic Architecture Anyway?” *Journal of Art Historiography* 6-NR/1, 2012.
- Serageldin, Ismail. *Space for Freedom: The Search for Architectural Excellence in Muslim Societies*. London: Butterworth Architecture, 1989.
- Simab, Sharifa. (2018, June 1). Personal interview.
- SOMA Architects. “Faith in the City Park51, Michel Abboud, SOMA” *YouTube*, 10 July 2015.

# Side Effects of the Second X: The Rare Mood Disorder of Premenstrual Dysphoria

SAMANTHA SWANK



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*WRITER'S COMMENT: Women like me often avoid any mention of periods when we want our moods to be taken seriously, lest our cyclic, rapid oscillations between normalcy and panicked hopelessness be dismissed as standard feminine moodiness. The concept of a menses-related condition was, to me, unacceptable: for my periods to both drive and define my depression meant to be invalidated through menopause. But whereas denial foments shame and stagnation, honesty precedes love, forgiveness, and change. This essay has been many things for me: a self-reflection, an explanation, an intellectual and scientific endeavor, a door for others that I don't usually open. Rarely have I disclosed the sheer depth of my psychiatric conditions, but I've learned that secrecy and shame only perpetuate an already devastating cycle, and to heal means to extend compassion to myself, to other sufferers, and to the perplexed witnesses of our illness with the knowledge I now have. I would like to thank the people in my life who have tolerated—and at times even loved—me, especially my partner, Seth Evans; to thank my brother, Zachary, who gave me a reason to live when I no longer had any other; and to thank my writing professor, Carl Whithaus, who provided the freedom and security to invest my time into such a vulnerable piece.*

*INSTRUCTOR'S COMMENT: Sam wrote "Side Effects of the Second X: The Rare Mood Disorder of Premenstrual Dysphoria" in my UWP 101 Advanced Composition course during Summer 2020. The course was taught remotely, but throughout the class, Sam's wit and ability as a writer shone through. Sam was willing to tackle difficult, painful*

*topics, but in ways that made them approachable for readers. In this well-researched, yet intensely personal piece, Sam's tone undercuts the heaviness, the weight, of the too serious threats and anxieties that seem to be building around this disorder. Sam's writing reminds me of Oliver Sacks' work, particularly his writing about his own migraines Sam documents the effects of Premenstrual Dysphoria (PMDD) but also reveals the anxieties and the human side of it. Sam also critiques psychiatry—particularly its certainties and its limitations in terms of listening to women's experiences. I can see Sam pursuing many different types of work, and I suspect writing—slightly irreverent and with a necessary spark of critique—will remain vital in whatever Sam does.*

*—Carl Whithaus, University Writing Program*

**NOTE:** *When I say “woman,” I'm using it as a broad term to refer to anyone with the female biology that PMDD requires, which includes those who are intersex as well as those who are not cisgender. I can only speak on PMDD from a cisgender female point of view; hopefully someone will be able to write of this topic from other perspectives and circumstances.*

**T**he tide will swallow us with its angry tongue, rapidly ascending from the pull of two silver spheres deep within us—moons that provide the foundation for life. Our lungs will gurgle and froth with inexplicable pain, each breath singing with the forceful collisions of lead bells in our ribcage. Currents will tear us from the shore into tangles of kelp and whirlpools of desperation, and we'll scream for help with futility. We'll grasp for a hand reaching out from a boulder, but will be thrashed instead by the tumbling waves until we're too weak to fight them, and we sink.

Silence. Crimson will slowly leach into the water, and we will be temporarily freed. Ocean pulses will gently rock us back to the shore, where the sand will graze our feet with its silky grains as we search for our loved ones, attempted saviors, the hand from the rocks. But by the time the beach crunches softly beneath our feet like powdery snow, everybody will be gone. So we'll sit back down, alone, and wait for the tide to swallow us again.

This is the sinister cycle of premenstrual dysphoria. A monthly depression or anxiety, or both, driven solely by hormonal shifts during the menstrual cycle. It consumes us in despair and dread on par with that of major depression and other severe psychiatric illnesses, to the extent that some of us will wonder, *are we bipolar?*, from the cyclic nature and intensity, *or are we borderline?*, from our erratic social behaviors. Many of us will wait years to be diagnosed, only after being dismissed by friends, family, and health professionals as hormonal, as sensitive.

But yes, we are hormonal and emotional: so severely that we can't live. Even though most others will be rational, hopeful, and only moderately bothered during the luteal phase of their cycles, between 6 percent (Pilver) and 15 percent (Spratt) of women with this disorder will attempt suicide. Nearly 19 percent of those with the condition report suicidal ideation. Even among women without the disorder, those with moderate premenstrual symptoms are also at a higher risk of suicidal ideation (but not of suicide or suicide attempts); their risk, though, is still lower than those with full blown premenstrual dysphoric disorder (Pilver). And regardless of whether a woman has this particular diagnosis, other mental illnesses predispose her to a higher risk of suicidal behavior during the premenstrual and early menstrual phase of her cycle, and many suffer from premenstrual exacerbation of a pre-existing mental disorder (Owens).

I know now that my own episodes of vague, inexplicable suicidal ideation, which I didn't have a name for at the time, were directly related to my menstrual cycles. I remember wondering if I was a type II bipolar with hypomania because I felt so good for a week only to plunge into a tangle of anxious despair again for another three; I wondered if the disorder perhaps skipped a generation or a sex on my father's side and leapt to me from my grandmother. I remember being a tightly wound wreck for two weeks, being too exhausted to even loathe myself for another, and having a week of respite to rebuild before it all repeated. But bipolar didn't fit, so I obsessively scoured the NIMH and Mayo Clinic and WebMD websites for symptoms of *anything* that truly captured what I had. A personality disorder? Dysthymia? Was it really only anxiety? Was it a panic disorder? Was I just overreacting?

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The Holy Gospel of psychiatry is known as the DSM, or the *Diagnostic and Statistical Manual of Mental Disorders*, with the most

recent version being the Fifth Edition (DSM-V). Though premenstrual dysphoric disorder had been loosely acknowledged in the Fourth Edition (DSM-IV) more than a decade earlier—named but not deemed an ‘official’ diagnosis—the DSM-V made it formal (Ro) and provided physicians and patients with something tangible and accepted that they could directly treat, rather than continue to circumvent the real diagnosis by treating any number of mood disorders that only partially fit the bill.

Also known as PMDD, premenstrual dysphoric disorder is a condition in which premenstrual hormonal changes inexplicably cause severe physical and emotional symptoms, including migraines, depression, anxiety, and suicidal ideation (Ro) in approximately 2–5 percent of women of reproductive age (Dubey). During the luteal, or premenstrual, phase of the menstrual cycle, blood levels of sex steroids shift, with progesterone sharply increasing and estrogen decreasing (Gorvett). For most women, this only causes minor physical and emotional symptoms, the emotional symptoms themselves perhaps driven by the physical—pain and fatigue are notoriously unbeneficial to mood regulation, regardless of sex. But for some, it manifests as something more insidious that interferes extraordinarily with daily life, whether it’s work, school, relationships, or all of the above. In my case, I pushed my most beloved away from me numerous times and almost obliterated a rare and beautiful love that I’m infinitely appreciative to experience. My friends learned early to leave me alone for weeks at a time until I emerged from myself and we resumed as normal until the next episode. Family members gave me my space and privacy—not something you hear from most teenagers—and only gently encouraged me to graze the borders of my comfort zone lest I panic and sob for days. Everyone knew me as moody but nice on a good day, as excessively sensitive and prone to being a ‘Debbie Downer.’ I had no idea what was wrong with me. Others just thought I was overly emotional.

Despite symptoms that are common between mental health conditions, such as low mood or appetite and sleep changes, PMDD is distinguished by its uniquely *predictable, cyclic* nature. Episodes only occur during the luteal phase, which is the time frame of roughly one to two weeks after ovulation but before menstrual bleeding. Comorbidity is common with PMDD, which can murky the diagnosis: strikingly high rates of depressive and anxiety disorders coincide with premenstrual dysphoric disorder, with 40 percent of us having at least one type of depression and 70 percent of us experiencing at least one type of anxiety disorder (Pilver). I can attest to experiencing all three.

But though it may appear at first with such statistics that the symptoms of PMDD are really more than likely an exacerbation of an underlying or undiagnosed condition, there's a catch: this disorder fails to manifest even during other major hormonal changes, including pregnancy and menopause, and also fails to appear at any other time of the menstrual cycle, or during menstrual cycles that lack ovulation, *regardless of comorbidity* (you can't exacerbate something that isn't there). Women who are otherwise mentally and emotionally healthy can still suffer from PMDD, which heavily suggests that "the menstrual cycle is required for the development of PMDD symptoms" (Yen, et al.). It merits a standalone diagnosis in its own right.

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The condition was controversial from the beginning, as are many women's issues. Debates raged within psychiatry, and society at large, about the validity and the possible negative implications of PMDD. Skeptics, including some physicians, argued that it was an over-pathologization of the female body, that little evidence existed for a diagnosis, and that it would only serve to perpetuate the notion that "emotional displays that are considered normal in men are seen as a mental disorder in women"—that there's no equivalent male mental disorder linked to testosterone. They believed that a diagnosis would undermine women's health and social progress by allowing "a sexist society" to weaponize it against all women (Daw). One study in 1992 even compared the daily symptom ratings of women who met PMDD diagnostic criteria with those who didn't, as well as with those of women using oral contraceptives and even with those of men, and claimed to find no difference in said symptom ratings (Gallant).

However, even the authors of that study admitted that functioning in those with severe premenstrual symptoms appeared to be negatively affected while functioning was not affected in any other group (Gallant), only undermining their point that the condition didn't exist. Furthermore, non-skeptics advised that those arguments against an official diagnosis were themselves sexist and belittling of women, that such dismissal "increase[s] the stigma of mental disorders . . . and can discourage women from seeking help" for genuinely treatable issues. It's 'benevolent' sexism, disguised as concern for our social progress when it's really a justification for neglecting female needs. The concept that "'We're conditioned to want a pill. Instead of . . . a nap or a divorce, or the ERA'" (Daw) is so

viscerally insulting: so I just need to sleep off my depression? I just need a constitutional amendment to undo my abrupt desire to die? Perhaps a divorce will cure my debilitating, excruciating anxiety! (I'm not married.) Perhaps I won't want to eat a bullet if I just believe that nothing's wrong with my body! (There is.) Assumptions such as these (which were, quite notably, made by a female physician who claimed to be a feminist—I'd hardly call that feminism) only contribute to the continued ignorance surrounding female-specific health concerns that already go undertreated and underdiagnosed. Societal views about menstruation and femininity can and *will* change, but this condition will not just fade away if we deny its existence. Denial never got me, my brother, my parents, or my grandparents anywhere in a mentally ill bloodline. That's a sample size of eight for the curious.

And is it really so far fetched to believe that some women may have premenstrual symptoms severe enough to be a disorder? Sadness, anger, angst, and other emotions can become overbearing enough to warrant their own condition names and treatments. And is it not hypocritical to acknowledge that hormonal shifts during the menstrual cycle can be both beneficial and detrimental for the brain (Gorvett), while simultaneously asserting that the symptoms of such shifts could *never* be so severe as to be a condition worth treating? Overpathologizing the female body is a genuine concern, of course, as medicine has previously been wrongfully weaponized against us. But isn't it sexist in itself to willfully undertreat female suffering in the name of a twisted form of feminism that only regards our economic or social status at the expense of our health? Haven't we been dismissed enough?

\* \* \*

Fortunately, this condition and its possible causes are currently being explored by the medical field. One theory suggests that a gene mutation in the ESC/E(Z) estrogen receptor complex causes an abnormal sensitivity in these receptors to fluctuations in sex hormones, amplifying luteal symptoms that would otherwise be minor and manageable, or even nonexistent (Dubey). Another proposes that increased luteal allopregnanolone (ALLO), a metabolite of progesterone, acts as an allosteric inhibitor in gamma aminobutyric acid receptors (Hantsoo and Epperson), meaning that ALLO binds to a place distinct from the active site and alters the shape of the receptor. Because that shape is so crucial to chemical interactions, the compounds that these receptors are

intended to bind to, such as serotonin or dopamine, become unable because they no longer ‘fit’ within the active site. This might explain why selective serotonin reuptake inhibitors such as sertraline (Zoloft) and fluoxetine (Prozac) are very effective for treating PMDD, with “60 to 90 percent” of diagnosed patients responding well to SSRIs, “compared with 30 to 40 percent of those who take a placebo” (Harvard). Patients with PMDD also respond far more rapidly to SSRIs than those with other types of depression, allowing for a cyclic treatment that doesn’t require medication every day of the month but rather only during premenstrual episodes for some sufferers (Harvard), also suggesting a stronger role of serotonin. Furthermore, a variation on the serotonin transporter gene has been demonstrated to contribute to higher scores of neuroticism, or tendency to feel unfavorable emotions, and higher neuroticism has been tied to increased severity of premenstrual symptoms in those with PMDD, as well as to other mental health conditions such as major depressive disorder (Gingnell). It’s likely that all three of these theories are at least partially correct: abnormal reception, allopregnanolone interference, and personality traits may all contribute to the disorder, or different combinations of said factors may contribute to the variation in treatment efficacy between patients.

It’s also possible that the brain simply functions differently—perhaps from causes explored in the previous paragraphs—during the luteal phase for women with PMDD. One study explored the possible role of overactivity in the cerebellum regarding the mental and emotional symptoms during the luteal phase, and it was determined that women with the disorder have higher activity in portions of the cerebellum that “have been implicated in emotional processing and mood disorders.” Stimulation of said areas even proved beneficial for reducing “anger and depression” in those with other psychiatric conditions, such as depression or psychosis (Rapkin). In other words, parts of the cerebellum—the posterior, or ‘in the back’, nodule-looking part of the brain that rests below that large wrinkly portion—are overactive, thus affecting how we process emotional stimuli and producing dysphoric symptoms aggravated by our sexual biology.

I found myself accidentally on Zoloft, one of the most effective medications for PMDD, back in February, and it’s been far more ameliorative than the Lexapro I had been taking before, both for my premenstrual symptoms and my generalized anxiety. My own psychiatrist

recommended that I take more Zoloft during my premenstrual phase, a schedule mentioned in the cited Harvard article, and such a schedule does indeed work. Yet I can also believe, beyond whatever serotonin affair is occurring in my skull, that brain structure plays a role in both directions of my illness; perhaps overactivity in the cerebellum creates the initial dysphoric feelings at the onset of the disorder, triggered by puberty, which in turn promote dysphoric feelings over curative or palliative feelings such as joy and excitement. And when you've been in such a cycle long enough, your brain is likely predisposed more toward neuroticism than toward a healthy emotional baseline. We know that those who have one episode of major depression, for instance, are at a 20–30 percent risk of having another; by your fourth episode, you're predisposed to a 70–80 percent risk of recurrence (Zindel) with less time between recurrences that become greater in severity (Solomon 56). I'm sure the consistent, cyclic nature of premenstrual dysphoria is a part of why depression and anxiety are so staggeringly comorbid—you escape for one week only to spiral back for another. There is already so little time between episodes that they eventually blend together; often, an episode of premenstrual dysphoria is itself the trigger for a distinct episode of depression or anxiety. It seemingly never ends.

What makes this particular depression exceptionally difficult is its visceral nature: our sexuality is quite private. Our sex organs, our uteruses, our ovaries are inside of us, difficult and often excruciating to access, as well as heavily scorned, and we're apprehensive to mention that our sadness, or anxiety, or corporeal pain may have even one thread of a relationship with our periods. How does someone receive treatment when their symptoms are repeatedly discounted and derided as common feminine overexaggeration by their own physicians and gynecologists—by other women? And in a country with inconsistent, at times abysmal, sexual education and perspectives, adolescents adjusting to their menses might not realize that their premenstrual symptoms are abnormally severe or unhealthy, especially when all they receive for seeking advice from parents, teachers, or friends is to curl up in bed with a pint of ice cream—when their tears are met with “Oh *honey*” and their cramps with a thousand milligrams of ibuprofen that does nothing. No one ever believed my mood symptoms were abnormal; to be fair, I've only ever divulged to two people the sincere extent of it, one of them being me. For all everyone else knew, I was just irritable and gloomy sometimes with

no real reason other than ‘being a teenager,’ yet nobody ever seemed to openly consider that my eventually permanent moodiness was a symptom of something more, and if they did, they never mentioned it to me.

But if one does, incredibly and fortunately, find themselves believed and heard, most often years later, treatments do exist that *might* alleviate their misery: alterations in diet, exercise, and sleep; vitamin supplements; cognitive behavioral therapy, or CBT; hormonal contraceptives; and SSRIs or other antidepressant and antianxiety medications (Harvard). But the only ‘cure’ is a total hysterectomy (removal of the uterus) and oophorectomy (removal of the ovaries), which release the sex steroids to which our premenstrually dysphoric bodies are so abnormally responsive. The only true prevention is to be born male.

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The only benefit to this disorder for me, in comparison to my other conditions, is its predictability, which also makes it so horrifically annoying and cruel: I don’t know when my major depression will suddenly reappear, as it did in the beginning of last month, or recede, as it did last week with a change in my medication schedule. But I do know when my premenstrual depression, distinct in both timing and characteristics from my other depression, will arrive. I know it’s here when I snap at the people who are kindest to me, or am so fatigued I can hardly lift my limbs, or am cussing at evolution for painful menstrual cramps (uterine muscle is extraordinarily thick and toned—helpful for childbirth, terrible the rest of the time). I’m afraid of both waking up and never waking up again. Every decision is an excruciating debate against myself with no winner, every compliment an incitement of war, every embrace a cage I must thrash out of. Love itself becomes intolerable: I am inherently and irrevocably unlovable, no one can or should or does love me as deeply as I love them, I’m hideous and malicious and utterly cruel. These thoughts all ricochet as I annihilate relationships with even the most devoted in my life, as I weep over the intimacy I both crave and cannot bear, that I ask for only to rescind it, that I plead for only to hate it. Reciprocation of love becomes just as impossible as receiving it. Describing it as the flip of a switch is entirely accurate: in the morning, I’ll be pondering career options and planning twenty years into the future with my partner; that afternoon I won’t see past the next twenty minutes and come within an inch of splitting up our relationship for no reason. Out of nowhere, this

condition blindsides even the most optimistic and successfully treated of us. All I can do is pop an extra 25 milligrams of Zoloft and hope it works that month.

Being a stereotype of the over emotional and irrational woman profoundly disheartens me. I can only hope others will understand that this is not womanhood itself, but rather a rare side effect of womanhood, that it's an illness completely separate from premenstrual syndrome, far closer to severe depression and anxiety than to the premenstrual syndrome that is so common and normal among the rest of us. Much as depression is itself a side effect of our humanity, premenstrual dysphoria is a side effect unique to the female sex; perhaps, for as long as we are human and female and experience any premenstrual symptoms at all, it will continue to exist. Depression has existed for as long as we have, and I'm sure the luteal version isn't special in that regard.

I didn't know when I was twelve, excited about menarche and by finally becoming a woman, that menstruation itself—what I believed to be an almost spiritual experience, healthy and mature—would become a trigger. I'd always wanted desperately to grow up, yet growing up has almost killed me dozens of times in ways metaphorical and not. I guess nothing will change until thirty years from now, when those two orbs within me cease to produce any sex hormones at all, and after an intense yet relatively brief period of menopausal anguish, I'll finally be free from that portion of my biology. Hell, if I really want to, I can induce it myself much sooner by getting a hysterectomy; but major abdominal surgery isn't my—or most people's—first option, and I want at least the opportunity to have children within the next fifteen years. What I'm doing will have to suffice for now, until it doesn't. That's how it goes: you wait until you can't bear it, and then the most drastic option becomes the most reasonable one; lose your uterus to save yourself from self-destruction or suicide. It's hardly an easy or clear decision, but too often it's a necessary one, and I only hope that the decision will one day no longer have to be between keeping your uterus or keeping your health—and consequently, your life.

## Works Cited

- Daw, Jennifer. "Is PMDD real?" *American Psychological Association*, vol. 33, no. 9, Oct. 2002. [www.apa.org/monitor/oct02/pmdd](http://www.apa.org/monitor/oct02/pmdd)
- Dubey, Neelima, et al. "The ESC/E(Z) complex, an effector of response to ovarian steroids, manifests an intrinsic difference in cells from women with Premenstrual Dysphoric Disorder." *Molecular Psychiatry*, vol. 22, no. 8, Aug. 2017, pp. 1172-1184. doi:10.1038/mp.2016.229. [www.ncbi.nlm.nih.gov/pmc/articles/PMC5495630/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5495630/)
- Gallant, Sheryle, et al. "Using daily ratings to confirm premenstrual syndrome/late luteal phase dysphoric disorder. Part II. What makes a 'real' difference?" *Psychosomatic Medicine* vol. 54, no. 2, Mar. 1992, pp. 167--81. doi:10.1097/00006842-199203000-00004. [www.researchgate.net/publication/21589482\\_Using\\_daily\\_ratings\\_to\\_confirm\\_premenstrual\\_syndromelate\\_luteal\\_phase\\_dysphoric\\_disorder\\_Part\\_II\\_What\\_makes\\_a\\_real\\_difference](http://www.researchgate.net/publication/21589482_Using_daily_ratings_to_confirm_premenstrual_syndromelate_luteal_phase_dysphoric_disorder_Part_II_What_makes_a_real_difference)
- Gingnell, Malin, et al. "Neuroticism-related personality traits are related to symptom severity in patients with premenstrual dysphoric disorder and to the serotonin transporter gene-linked polymorphism 5-HTTLPR." *Archives of Women's Mental Health*, vol. 13, no. 5, 4 May 2010, pp. 417–23. doi:10.1007/s00737-010-0164-4. [www.ncbi.nlm.nih.gov/pmc/articles/PMC2941046/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2941046/)
- Gorvett, Zaria. "How the menstrual cycle changes women's brains—for better." *BBC Future*. 6 Aug., 2018. [www.bbc.com/future/article/20180806-how-the-menstrual-cycle-changes-womens-brains-every-month](http://www.bbc.com/future/article/20180806-how-the-menstrual-cycle-changes-womens-brains-every-month)
- Hantsoo, Liisa, and C. Neill Epperson. "Allopregnanolone in premenstrual dysphoric disorder (PMDD): Evidence for dysregulated sensitivity to GABA-A receptor modulating neuroactive steroids across the menstrual cycle." *Neurobiology of Stress*, vol. 12, May 2020, doi.org/10.1016/j.ynstr.2020.100213
- Owens, Sarah A., and Tory Eisenlohr-Moul. "Suicide Risk and the Menstrual Cycle: a Review of Candidate RDoC Mechanisms." *Current Psychiatry Reports*, vol. 20, no. 11, 6 Oct. 2018, doi:10.1007/s11920-018-0962-3. [www.ncbi.nlm.nih.gov/pmc/articles/PMC6844188/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC6844188/)

- Pilver, Corey E., et al. “Premenstrual dysphoric disorder as a correlate of suicidal ideation, plans, and attempts among a nationally representative sample.” *Social Psychiatry and Psychiatric Epidemiology*, vol. 48, no. 3, Mar. 2013, pp. 437–46. doi:10.1007/s00127-012-0548-z. www.ncbi.nlm.nih.gov/pmc/articles/PMC3774023/#R24
- Rapkin, Andrea J., et al. “The Cerebellum and Premenstrual Dysphoric Disorder.” *AIMS Neuroscience*, vol. 1, no. 2, 30 July 2014, pp. 120–141. doi:10.3934/Neuroscience.2014.2.120. www.ncbi.nlm.nih.gov/pmc/articles/PMC5338637/
- Ro, Christine. “The overlooked condition that can trigger extreme behaviour.” *BBC Future*. 15 Dec. 2019. www.bbc.com/future/article/20191213-pmdd-a-little-understood-and-often-misdiagnosed-condition
- Segal, Zindel, et al. “Challenges in Preventing Relapse in Major Depression: Summary of a National Institute of Mental Health Workshop on State of the Science of Relapse Prevention in Major Depression.” *National Institute of Mental Health*, 2001, static.cigna.com/assets/chcp/pdf/resourceLibrary/educationCenter/memberResources/challengesofPreventingRelapseinDepressionNimh.pdf, PDF file.
- Solomon, Andrew. *The Noonday Demon: An Atlas of Depression*. (Reprint ed.), Scribner Books, 2001, p. 56.
- Spratt, Victoria. “‘I Felt Suicidal’: Living with Premenstrual Dysphoric Disorder.” *Refinery29*. 11 Sept. 2018. www.refinery29.com/en-gb/living-with-pmdd
- “Treating premenstrual dysphoric disorder.” *Harvard Health Publishing*, 30 July 2019.
- Yen, Ju-Yu et al. “Early- and Late-Luteal-Phase Estrogen and Progesterone Levels of Women with Premenstrual Dysphoric Disorder.” *International Journal of Environmental Research and Public Health*, vol. 16, no. 22, 7 Nov. 2019, pp. 1–11. doi:10.3390/ijerph16224352. www.ncbi.nlm.nih.gov/pmc/articles/PMC6888463/

# Green

JENNIFER HEATH



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*WRITER'S COMMENT: I wrote the beginning of this essay one month after my sexual assault because I wanted to remember what had happened, or at least, what I could recollect. Deep down, I knew writing down the events of the attack would help me find justice, even if I wasn't sure it would ever happen. And when justice did come a year later, it reopened all my old wounds, shook up the foundation of my relationships, and gave me strength because I made sure he couldn't hurt anyone else. The original piece was much shorter and didn't dive into the aftermath of the assault. It wasn't until I enrolled in Professor Zinzi Clemmon's Creative Writing Nonfiction class that I returned to "Green" as a spoken word piece and turned it into the most personal essay I'll ever write. Vulnerability never gets easy, but its impact ripples outward, touching the lives of women and men I'll never meet. I hope this essay allows survivors to feel less alone. I see you. I hear you. I'm here for you.*

*EDITOR'S COMMENT: Jennifer's essay provides a powerful reflection of a traumatic event. Incredibly relatable and impactful, she not only describes the sexual assault and the details surrounding it, but also includes how her (now ex-) boyfriend, mom, supervisor, and close friends responded. Similarly, she adds details about the assailant's mother and the incarcerated individuals she's worked with, knowing that some of them are serving sentences for the same crime, demonstrating the multifaceted struggle she and many other survivors have endured. All this works to complicate the stereotypical, straight forward narrative that readers may expect from those who have been sexually assaulted, further speaking to Jennifer's bravery in telling her*

*story. Like Jennifer, I hope her essay helps to empower survivors while increasing awareness, empathy, and allyship in others.*

*—Jillian Azevedo, University Writing Program*

**Content Warning:** *This essay includes details regarding sexual assault and its subsequent long-term affects. We ask that you remain aware of any feelings that may arise as you read it and consider contacting UC Davis’s Center for Advocacy, Resources, & Education (CARE) for further resources.*

I was standing in front of my bathroom mirror, wearing a black-and-green striped dress. Green for St. Patrick’s Day. Green for my eyes. Green for my favorite color. I had finished the final touches of my makeup—heavy and dark, night shades for the night ahead. I already drank one tall can of Mike’s Hard Lemonade. I could handle it. It was my pregame.

My friends and I arrived at the bar and drank more in the parking lot. It was St. Patrick’s Day, the day we all drink. When we first entered, it was practically dead, too early for late-night revelry. So, we invaded the upstairs VIP area and talked lively among ourselves. I was happy. I was confident. The world was my oyster—or a five-dollar can of Guinness.

More of my friends arrived, and we went outside for a game of giant Jenga, then a game of giant beer pong with garbage cans and volleyballs. I played, I tossed, I served the ball as if I were back on my eighth-grade volleyball team. I drank more Guinness. We went back inside the bar crowded with bodies. My friend was there waiting for me, and we took shots of Jameson. She told me how much she liked the book I wrote.

The night got fuzzy as people started to leave. My boyfriend, Mike, asked me if I wanted to go to a house party, but I declined. I wanted to stay at the bar a little longer and then get an Uber home. I was almost done with the night. A few friends stayed, and I indulged in one more drink, something sweet and dangerous. I was at the bar, ready to close my tab, contemplating a late-night Taco Bell order, when the man beside me complimented my dress, my hair, my freckles, my smile. Kindly, I smiled in return, asking his name and if he was enjoying the evening. He gave me small talk and a look I recognized as predatory. But I wasn’t worried. I was headed home. I closed out my tab—

I was running, sprinting, gasping for air as I tried to think of something, anything.

*Where am I? Why am I on Greenback? Why is that traffic light staring at me?*

Green. Green like my dress. I was running, fleeing. *From who?*

I tripped and fell, tumbling into the grass next to the sidewalk. My ears rang as a man ran up to me, cursing.

“Oh my god! Baby girl! What the fuck!”

My mind was a swirl of adrenaline and fleeting glimpses of consciousness. Pain and fear. He helped me up, but I fell again, my knees unable to work, and the back of my head smacked against the concrete. He cursed again and left once I screamed at him to go away.

I woke up behind the Beach Hut Deli on the corner of Fair Oaks and Greenback. His bloodshot eyes were before me. His fingers were inside me. I couldn't register what was happening as I lay with my legs spread apart on the rough concrete, ass bare and cold, my throat hoarse, aching. I told him to stop and tried to crawl away. He continued to penetrate me with his fingers, and I realized he wasn't going to stop, so I lay there, uncertain of whether or not I should put up a fight.

“Your pussy's so good, girl. So tight.”

“I don't want this. Stop. It's not turning me on.” He removed his fingers and shoved them in my mouth, smearing my own scent under my nose.

“You seem to like it, girl.”

“No, I don't! I have a boyfriend!”

“He ain't here! Why ain't he here?”

I was sobbing. “Stop, please! PLEASE! FUCKING STOP!”

I slapped him.

He hit me back, slapping me across the face. Once. Twice. I tried to scream, but he wrapped his hand around my throat and held me until I was quiet and lying still. I was scared. I realized I could die. He could kill me if he wanted to.

I lost consciousness and gained it again as a sharp rock embedded itself in the sole of my foot. I was barefoot, and my panties were missing. He was walking me across sharp rocks alongside a street I grew up on.

“You raped me,” I said to him.

“Are you kidding me? I didn't rape you.”

“You put your fingers in me when I didn't want them. You slapped me.”

“Okay, okay. I’m sorry I hit you, and I’m sorry I ripped your panties off, okay, but I got kids, so you need to shut the fuck up.”

I woke up on a couch I had never been on before. It was quiet, the gray sky bleeding through the overhead window. I sat up, the images and feelings from the night before rushing back to me. I tasted blood and ran my tongue over my swollen lip. My knee looked like roadkill and felt like it. I noticed my phone connected to a charger beside the pillow—the only miracle of the night. All my belongings were safe, save for my shoes and my panties.

I limped to the bathroom, the feeling of his fingers inside me as real as they were a few hours before. I knew nothing else had happened. Peeing in a stranger’s bathroom would have hurt ten times worse if it had. I left the bathroom, collected my things, and called an Uber.

The Uber arrived, and the driver was a woman—thank God! Once we pulled out of the apartment complex, I realized where I truly was—less than a mile from my childhood home. My parents were just down the street, probably enjoying their morning coffee. I wished I was there instead, eating Eggos with peanut butter, watching the new episode of *Inuyasha* my dad had recorded for me on a VHS tape the night before. Those mornings before high school were long gone, but I hadn’t realized how special they were.

We drove in silence until we were a few miles from my apartment. She asked, “Rough night?”

“I think someone hurt me?” I said to her quietly, my voice faint and uncertain. I wasn’t entirely sure yet. The haze of the alcohol and the shock from my injuries left my mind spinning, trying to grasp the collection of memories from the night before. She gave me as much comfort as a stranger could and dropped me off. I stumbled inside my apartment and took a shower, shaking and stunned. Speechless.

I tried calling my boyfriend, but he wasn’t answering. I noticed a missed call from my mom and put off calling her back. I needed to compose myself. My boyfriend only lived a mile away in another apartment complex. With my car still parked at the bar, I decided to walk to his place and tell him what had happened, desperate for someone to comfort and care for me.

I don’t know how I walked a mile with a swollen knee and road rash covering half my legs. My shoulders, arms, and butt were darkly bruised as well. I limped to Mike’s place, but he wasn’t there. No one was, not even his roommates. I called him again and walked around the building

to knock on his window. I then called a friend who lived at the apartment where the house party was, and he picked up. I asked if Mike was there, and he handed the phone to him. Mike had been sleeping and was angry he'd been woken up.

"Something bad happened last night," I said.

"What do you mean?" he asked, his voice more alert. I tried to explain everything I could remember without giving him all the gory details. I told him someone assaulted me last night, and I woke up at his place. I had to get an Uber home.

"Well, babe, you just drink too much!" he barked, as though I had hooked up with some random guy while I was drunk. As if I had hurt him.

My mouth fell open, and I yelled at him for blaming me and not the man who had hurt me. He didn't want to talk about it and hung up the phone. My mom called me shortly after, and I picked up, hoping she would comfort me better than my boyfriend had.

My younger brother was taken to the hospital for emergency surgery to remove his appendix the night of my attack. That's why she had called me so many times. She could tell something was wrong, and, after pressing me to tell her what was going on, I spilled it all, just as I had done with Mike over the phone.

"Well, honey, don't you think this is a sign to stop drinking so much? You could have been seriously hurt!"

I was floored. The two people I trusted most blamed my assault on my drinking. I had never felt so low. I couldn't yell back at her, so I clammed up and told her everything would be okay—that I was fine and just needed to rest. We hung up, and I cried as I limped back home. I texted my best friend, Marie, and told her what had happened. She called me right away and asked if I was okay. I retold the story I had so naively given my mom and Mike, but Marie cried with me on the phone instead of getting mad.

I spent the rest of that day laying on my couch, injured and hungover, watching reruns of *How I Met Your Mother* with his voice in my head, his eyes in front of my face, and the smell of my own scent stuck in my nose. My other best friend, Jackie, who was in town at the time, dropped all her plans and came to my apartment to spend time with me. She fed me and let me talk about what had happened, allowing me to work through what I could remember and what I couldn't.

Mike distanced himself from what had happened to me. I don't even think he believed me. Meanwhile, my mom had tried to convince me that I'd just made a mistake and went home with the guy because I was drunk. It felt like I was all on my own and, though I didn't realize it at the time, I was broken. Not only was my body injured, my mind and soul had ruptured. The very core of my being had changed, and I wouldn't realize it for another eighteen months.

At first, I was desperate to deny the assault had even happened, but it was nearly impossible to forget since my entire body was bruised, my legs rubbed raw from falling on asphalt, and my knee was the size of a softball. My eyes were swollen from sobbing during my attack, my bottom lip busted, my vagina raw and irritated. Was I being overdramatic? Maybe I was just drunk and fell hard. Was I actually trying to hook up with him? Had I really been raped? He hadn't penetrated me with his penis, but he had penetrated me—removed my clothing and forced me to do things I wasn't conscious enough to consent to. And when I screamed, he hit me, choked me.

I didn't want to report it because I knew I'd been too drunk that night to give a complete statement. I worried that the police would blame me as well, just like the people I trusted most had blamed me. But two days after the assault, I found a strange business card in my wallet. I realized it was his business card. I could now name my attacker. I knew where he worked and where he lived.

I told Marie about the business card, and she convinced me to go to the police.

She said, "It could have been me. It could have happened to any one of our friends. We all go to that bar."

I called my boss that night and explained what had happened. She told me about her sister's attack outside of a Chili's in the 1980s and how she understood the kind of pain I was in. She told me to take as much time as I needed. Due to my injured knee, I had to take the entire week off. I worked for the California Department of Corrections and Rehabilitation, and we had a big event coming up that week at San Quentin. It wasn't my first time inside a male prison. It wasn't even the second, but I'd had good experiences working with the men who were graduating from our coding program, the first of its kind ever to be taught behind bars. These were the kind of men who wanted a second chance. I felt safe knowing they wouldn't repeat their former offenses

because they had their minds set on the future. But there was no way in hell I'd be able to look felons in the eye, not after what I'd been through. Not that soon, at least.

The following day, Marie picked me up and took me to the police station, where I filed a report. An officer interviewed me, and I tried to give him as many details as possible, fiddling with the paper Dixie cup they'd given me. The tap water left me feeling thirsty. Since I had been drunk and couldn't remember when or how I left the bar, I was embarrassed and worried they wouldn't believe my story. But I had his business card—I wasn't making this up. The officer looked up his name in their system. He already had a record. They printed out a lineup of faces, and I picked him out immediately. I couldn't forget those bloodshot eyes.

After the officer took pictures of my numerous injuries, Marie and I left the police station to relax at her place. Later, we saw the live-action *Beauty and the Beast*. It was the first time I'd felt happy in nearly seventy-two hours. I cried in the movie theater.

\* \* \*

It was exactly one year before I heard back from the police.

I stayed with Mike and didn't talk to my mom about the assault ever again. I was very good at denying the emotional damage I'd endured.

One day, Mike told me a detective knocked on my door while I was at work. He said maybe it was a fluke, but I knew exactly why a detective was looking for me. A private number called me, and I answered it while on break at work. The man asked if he could talk with me in an hour. I told him to come on my lunch break.

I dodged raindrops as I jogged to his unmarked Charger parked in the visitor spot of my building. He greeted me and asked me to repeat the statement I made to the police nearly a year prior. I explained the worst night of my life the best I could and apologized for not remembering everything. He looked into my eyes and said, "You should be able to go out and drink with your friends and get home safe. This isn't your fault."

He showed me another lineup of faces, and I pointed him out again. Seeing his face after a year was jarring, but I was used to burying those emotions by then.

The officer left, and I told my supervisor I'd taken a long break to speak to a detective about my assault case. She was sympathetic. I didn't even tell Mike what had happened at work; I knew he wouldn't care.

By June, I got a call from one of the California Assistant Attorney

Generals. I took time off work to drive downtown and met with him in his windowed office to describe the event of my assault again. He said that there were two other victims, and they had physical evidence related to my case. I asked what kind of evidence, but that was undisclosed information needed for the court proceedings. Was it the black cotton panties he tore from me? Was it the security cameras the first officer said he'd check after I gave my statement?

I imagined how it looked—me screaming and fighting my attacker while I lay on the concrete, drunk and terrified. I wondered how my dad would react if he ever saw footage like that. What if he had killed me, and they had searched for my body like those forensic crime dramas? There was a creek a few yards away from where the attack had happened. He could have easily dumped me there. I knew I'd have been bloated and unrecognizable when they found me. My mom would have come to the coroner and identified me from the tattoos she hated. Mike probably would have missed the call.

Before breaking up with Mike, I had cheated on him with Alex, a mutual friend I'd met on Facebook. It felt like I had reached another shamefully low point in my life—like I couldn't get my shit together. I started to believe I was the type of girl who cheats, the kind of girl who gets too drunk and winds up on her back in a parking lot. Despite the guilt and self-loathing, something wouldn't let me walk away from the affair. There was something about the way Alex treated me that lifted the veil I'd been living under, and I realized my infidelity wasn't unfounded. Mike had betrayed my trust by blaming the assault on my drinking and ignoring it entirely after the fact. I realized I could never trust him again. He'd dropped the fragile egg I'd become, and he never apologized for it, even when I explained to him how hurt I was.

I guess I can't blame him entirely because I hid how broken I was. In the end, he was wrong, but I never really showed him how wrong he was. But how could I show someone the pain inflicted by an assault? Even when I felt okay enough to have sex, Mike thought I was just frigid; he didn't understand the element of the assault, how brutal it was. I never explained the details of it, but was I supposed to?

How do you explain the fear of dying to someone who thinks you brought it upon yourself? All he cared about was working, working out, and drinking. Everything in between was inconsequential. When I broke up with him, some friends told me how often he cheated on me. How

was I with him for another eighteen months after the assault? I don't know. Stupidity? Denial? Naiveté? Was I as green as the dress I wore that night?

His sentencing hearing was scheduled for December 2018, and I just had upended my life by breaking up with Mike. I knew there was no point in asking Mike or my family to attend the hearing with me. I called Jackie and asked if she could be there for me, and she and her sister picked me up at seven o'clock that morning. We sang to BTS on the way there, and when we walked inside the courthouse, I noticed his mother sitting on the bench across from us.

I walked into the courtroom and saw him sitting at the table before the judge in a blue denim jumpsuit. He was tall, and his hair was cut short, his face thin as his head hung forward, long dark hands clasped together in front of him. I had worked with men like him. They weren't so bad, but now I'd experienced firsthand what it took to go to prison. My sympathy had worn thin.

There were two other victims. One hadn't shown up to the hearing, but the other did, and she brought her father with her. She was younger than me. He had assaulted her in her own home. The Assistant Attorney General read a letter she wrote for the court to hear. In it, she explained the loss she felt and how he had robbed her peace of mind. She explained how she tried to get it back by installing an expensive security system in her home after the assault; even then, she still couldn't sleep at night. I don't know why I didn't say anything to her after the hearing was over.

He was sentenced to nine years in prison for varying degrees of sexual assault; his probation would last another eight. He was also mandated to register as a sex offender. A part of me felt guilty. He'd become another Black man tossed behind bars. I couldn't deny the facts, though. I remembered his face before mine while he assaulted me with his fingers. I remembered his voice. He'd given me his business card. He lived down the street from my parents' house, and I later found out he was the brother of my current boyfriend's godfather. I met him—Alex's godfather—in April of 2019. He looks identical to the brother I helped send to prison, although the look-alike brother is a stand-up gentleman. Allegedly, the man who assaulted me had molested his nieces. I learned that no one in his family liked him. They were happy he was in prison.

I still wondered if I deserved it. I didn't go home when I should have, didn't listen to my friend when she asked if I was okay in his company.

In the ether of my happiness and confidence, I didn't see him as a bad man. He reminded me of the inmates whose hands I shook on stage after giving them their diplomas. I didn't want to see anyone in a bad light that night, not Mike nor my friends who had left me drunk and alone in a bar. Little did I know that blind trust could land you flat on your back in the middle of a parking lot with your panties torn off and another man's fingers inside you—or around your throat.

I haven't celebrated St. Patrick's Day since. Green isn't my favorite color anymore.

I sit here writing about the worst experience of my life, rubbing my temples and listening to Alice In Chains. No one will understand what I went through exactly. Some will empathize—women are assaulted in outstanding numbers, reported and unreported—and many more will sympathize. Still, no one will understand the terror I felt running down a street I vaguely recognized, only to trip and fall, injuring my knee to the point of scarring. I still can't feel the small patch of skin on my kneecap. Whenever an ocean wave hits it, it feels like the skin is being taken away by the tide. It's permanently numb.

I didn't tell my therapist about the assault until six months later—that's how in denial I was, although I did get an STD test one month after the assault. I was due for another Pap smear, and I needed to explain to my doctor what had happened. Fortunately, she was understanding and told me no one should experience what I'd been through. But I went through it. I went through the whole damn thing, blacked out or not. I went through Mike and my mom blaming me for what had happened, emotionally scarring me.

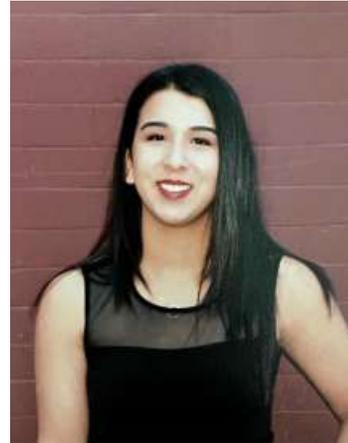
*You just drink too much.*

*Well, honey, don't you think this is a sign to stop drinking so much?*

I'm drunk now. Alcohol eases my anxiety. I don't take medicine. I drink.

I just don't go to bars alone anymore. I'm not green anymore.

# Home (Not) Free: An Evaluation of the Relationship Between Housing Costs and California State University (CSU) Graduation Rates



EMMA TOLLIVER

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*WRITER'S COMMENT: When my parents were my age, they made the immensely difficult decision to drop out from their respective "dream school" universities because it became too expensive for them to attend. They worked incredibly hard to ensure that my brother and I did not face a similar dilemma. When tasked by Professor Thomas Timar to research, analyze, and critique an area of education policy, I decided to study California's higher education affordability crisis. I examined the California State University (CSU) system, the largest public university system in the nation, because the success of the CSUs is essential in order to address declining college graduation rates, housing affordability for college students, and the growing workforce skills gap in California. I hope this research achieves two primary purposes: first, I hope it furthers the demand for good policy and better practice by explaining how we can work to alleviate the material hardships that prevent students from graduating. Second, I hope it makes my parents—who have sacrificed so much so that I could have the privilege to attend UC Davis—proud.*

*INSTRUCTOR'S COMMENT: Emma wrote "Home (Not) Free: An Evaluation of the Relationship Between Housing Costs and California State University (CSU) Graduation Rates" for POL 108: Education Policy and Politics in the Spring Quarter of 2021. The paper grew out of her concern about the lack of affordable housing for students and the impact it had on their ability to be successful. Based on her*

*finding that first-generation students and students from low-income families were more likely to drop out than students from higher SES backgrounds, Emma examined the current state of CSU student housing affordability and how housing insecurity is addressed at CSU campuses. It is a complicated topic, and I was worried that she would have a difficult time with the statistical analysis. It turned out to be an exceptional paper. Most importantly, Emma developed an excellent set of policy recommendations to effectively address the issues raised in her paper. I believe that these recommendations can make an important contribution to the discussions the California Legislature will have on this very important topic in the coming session.*

*—Thomas Timar, School of Education*

## **Introduction**

**I**t is a well-understood phenomenon that financial burden is related to lower college students outcomes; as financial burden increases, college student outcomes worsen. Therefore, it is important to examine the relationship between housing costs and the California State University (CSU) graduation rates, as well as how to improve CSU graduation rates by alleviating material insecurity. The CSU system is the largest public university system in the nation, with twenty-three campuses (The California State University, 2017b). By examining current policy in the state of California and within the California State University system, I will evaluate how housing insecurity is currently addressed, analyze alternative solutions, and offer policy recommendations for future courses of action. Ultimately, I will advocate for administrators and policymakers to act urgently in improving graduation rates at California State Universities by working to address housing affordability.

## **Background: Literature Review**

Understanding how material hardships—a manifestation of the college affordability crisis—affect students is instrumental in developing measures that increase college graduation rates. Material hardships, such as food insecurity and housing insecurity, affect student performance, and students facing material hardships are less likely to graduate from college. Researchers reported that college students who identified themselves as

struggling to eat enough food due to financial hardship were 22 percent less likely to earn a 3.5 GPA or higher than a 2.0–2.49 GPA (Broton & Goldrick-Rab, 2016, p. 19). Material hardships, which predominantly affect low-income students, create an unsafe environment, instill feelings of uncertainty in students, and prevent students from focusing on their academic material. Researchers Katherine Broton and Sara Goldrick-Rab proposed that universities partner with local nonprofit organizations to ensure that students have access to a “safety-net” of resources. They also recommended that universities lobby at the state and federal level for policies that increase accessibility to food resources and affordable housing in college towns and areas. Regarding Broton and Goldrick-Rab’s first recommendation, it may be prudent for universities to focus their “safety-net” resources on providing housing security to students, as monthly rent payments are more expensive than food or other material goods.

Additionally, it is imperative to establish a general understanding of the relationship between housing and graduation rates in order to articulate why policy related to college housing affordability must change. College housing presents a unique challenge as it relates to and complicates graduation rates. A case analysis conducted by Arna Nance (2016) found that commuter students at Mississippi community colleges were more likely to graduate on time than residential students (students who lived on or near campus) at Mississippi community colleges. Commuter students had a 17.7 percent graduation rate as opposed to residential students with a 10.8 percent graduation rate when graduating in two years (p. 26). This finding, while limited due to the nature of the research being a case study and the population of interest being undersized and very specific, suggests that there is a statistically significant difference in graduation rates between students who must pay for housing and students who do not pay for housing; therefore, it is plausible to infer that there may be a relationship between housing costs and graduation rates.

While there is limited literature evaluating housing and its relationship with college graduation rates, the work of Broton, Goldrick-Rab, and Nance suggest that housing in college affects college graduation rates to a statistically significant degree. This area of study must be further explored in order to create effective policy and practices to increase graduation rates.

## **Evaluation of the California State University (CSU) System**

California is characterized by its high cost of living and expensive real estate. In the twenty-three cities that host California State University (CSU) campuses, the average home value—home value being defined as the median cost of a home from the years 2015–2019—was \$495,879, with the minimum average home value being \$242,000 in Fresno and the maximum average home value being \$1,097,800 in San Francisco. This average is far higher than the national average in 2019: \$375,500. This phenomenon can also be observed in rent prices. Observing the same twenty-three cities, the average rent—rent being defined as the median market rate per month for an individual from the years 2015–2019—was \$1,484. The minimum rent average was \$1,005 in Fresno and the maximum rent average was \$2,107 in San Jose. The average rent cost in 2019 across the United States was \$1,097—hundreds of dollars less than the average of a city that has a CSU (US Census Bureau & US Department of Housing and Urban Development, 2021).

The national- and CSU-host-city disparities only begin with the cost of living; differences in graduation rates at the national level and in the CSU system are plainly apparent as well. In the last year, 41 percent of American college students that were first-time students received their bachelor's degree within four years of enrolling at their university (Hanoen, 2021b). However, in 2019, only about 28 percent of students that were first-time, full-time students at California State Universities received their bachelor's degree within four years. Sixteen of the twenty-three CSU campuses reported graduate rates for first-time, full-time students that were under 30 percent in 2019.

UC Berkeley emeritus professor David Kirp emphasized the importance of CSU graduation rates in his statement, “If all the Cal State graduates disappeared for a day, [the state of California] would stop. Traffic lights wouldn't work, the weather system wouldn't work, there'd be no one teaching in the classrooms. There'd be no police, fires would just be burning” (Gordon, 2019). In his book *The College Dropout Scandal*, Kirp details how public policy fails to consider or address low graduation rates, especially in the state of California. Kirp went on to say that “The Cal States are California . . . if [policymakers and educators are] focused on improving graduation rates, [they should] be working

with the Cal States” (Gordon, 2019). Kirp’s assessment of the importance of CSUs is not an overstatement; in the 2018–19 academic year, the CSUs generated nearly 209,000 jobs and \$26.9 billion across the system. Researchers estimate that, as of 2019, CSU alumni in the workforce had created 747,000 jobs and generated \$88.1 billion for the state economy (The California State University, 2017a). The functions of the CSU as an educational institution and employer are instrumental to the health of the California economy; thus, it is imperative that policies and practices are created that effectively raise the graduation rates at CSUs.

Furthermore, it appears that California may be heading toward a workforce skills gap crisis. Through statistical models, analysis of historical trends, and projections, the Public Policy Institute of California (PPIC) has reported that “If current [trends in the California economy and in California college graduation rates] persist, by 2030 California will have a shortage of 1.1 million workers holding a bachelor’s degree,” with 38 percent of jobs in California requiring a bachelor’s degree but only 33 percent of Californians possessing a bachelor’s degree (Johnson et al., 2015).

Internationally, the United States ranks eleventh in most degree-holding inhabitants among nations. Just two decades earlier in 2000, the United States ranked fourth in the same category (Porter, 2013). This development only intensifies the issues presented in the PPIC report. If these trends continue and the United States continues to fail in producing large amounts of degree-holding citizens, a growing concern that the United States may be unable to compete with the rest of the globe will ensue. As the CSUs are the largest public university system in the nation, as well as when considering the size of California’s economy (The California State University, 2017b), it is reasonable for policymakers to begin with CSUs when determining how to best address these concerns and stimulate high college graduation rates in America.

## **Policy Analysis: Existing State Policy**

The California State University system, as a public university system, is the responsibility of the state of California. It is the largest four-year university system in the state and across the nation, thus serving as California’s primary undergraduate teaching institution. The CSU system is also the most affordable public four-year university system (The California State University, 2016). Therefore, it is imperative that

there is state government involvement, federal government involvement, or both state and federal government involvement when working to address issues across the CSU system. Operating under the context that the CSU system is the responsibility of the state of California, California policymakers should be working to create initiatives and measures that will improve graduation rates at CSU campuses.

The 2021–2022 May Revision of the State Budget proposed by California Governor Gavin Newsom (Office of the California Governor Gavin Newsom, 2021) allocates \$144.5 million to support California State University base operational costs. This funding has been allocated under the expectation that undergraduate tuition and fees will not change for the 2021–2022 academic year and that the funding will partially be used to reduce gaps in equity (p. 83). The state budget is a legal instrument that empowers the California State University system.

At the state level, there is one California state policy that addresses the distance between the national average graduation rate and the CSU graduation rate. Additionally, there has been no research at the state or federal level evaluating if California’s abnormally high cost of living affects graduation rates. This is a failure of policymakers; the government should intervene because the CSUs are public universities and, therefore, state-owned entities. The lack of policy to prevent material hardship from dramatically affecting college students is a failure of the California state government.

The singular state policy, entitled Graduation Initiative 2025 and abbreviated as GI 2025, is a collaborative effort with the CSU system and strives to improve the graduation rate for both first-time and transfer students. GI 2025 was piloted in 2015 and will end in 2025. GI 2025 is characterized by its six operational priorities: academic preparation, enrollment management, student engagement and wellbeing, financial support, data-informed decision making, and [removing] administrative barriers (Office of the California Governor Gavin Newsom, 2021, pp. 83–85). Graduation Initiative 2025 is an administrative instrument used to empower CSU students by providing them the resources and assistance needed to earn their degree. At the start of the program, transfer students graduated at a significantly higher rate than first-year students (p. 84); this implies that first-year, full-time students are more sensitive to factors that negatively affect graduation rates. The 2021–2022 State Budget allocated \$15 million to develop and grow the Basic Needs Initiative, an

initiative under Graduation Initiative 2025 seeking to alleviate material hardships and burdens students experience (p. 85). While the program has not published much of their findings, it has stated that graduation rates showed improvement in the years following the program's initial start in 2015.

## **Policy Analysis: Consequences**

While Graduation Initiative 2025 may prove to be successful, other policies should still supplement the program in order to improve CSU graduation rates. The national college dropout rate is 40 percent, and several CSU campuses report dropout rates that are far higher than this national average (Gordon, 2019; Hanson, 2021a). Relatedly, the majority of students that dropout from college—38 percent of college dropouts—do so due to financial pressure (Hanson, 2021a). As the CSUs are public entities run by the California state government, it is the responsibility of policymakers to create policy that can alleviate the financial pressure students experience and subsequently improve graduation rates.

Students who fail to graduate on time will be left with more debt than students who do (Gordon, 2019; Hanson, 2021a). Therefore, students who fail to graduate on time will continue to experience financial difficulties in adulthood; these difficulties may manifest as an inability to purchase a home, save for retirement, or otherwise develop financial assets and security. If former CSU students who did not graduate on time find themselves in this situation, they may leave California entirely due to California's abnormally expensive real estate market. Migration to nearby states like Arizona, Nevada, and Texas is becoming more common (Fulton, 2021). It is reasonable to assume that there may be a migration of former CSU students who did not graduate. However, this migration would be detrimental to California: the California workforce would shrink, the state economy would suffer from fewer dollars circulating within the state, and California could potentially lose national political power by being stripped of a congressional seat in the House of Representatives.

## **Policy Analysis: Alternative Solutions**

The University of California (UC) system, the other four-year public university system in the state of California composed of nine

undergraduate campuses and one graduate campus, has attempted to address housing insecurity in UC students and offers a model of a potential alternative solution. In 2016, former UC President Janet Napolitano developed the Student Housing Initiative under the University of California Office of the President (UCOP). The initiative sought to expand student housing through the UCs and to accelerate the current student housing developments. The initiative allocated three million dollars to nine of the ten UC campuses—Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz—and provided the campuses the flexibility to use their funding as fit to address the unique housing situation at each respective campus (The University of California Office of the President).

Currently, there is no state policy that directly addresses housing insecurity in CSU students, nor is there a policy that seeks to improve graduation rates by alleviating housing insecurity. However, the state and CSU system could potentially address this issue by building from an existing policy, Graduation Initiative 2025. By creating a housing equity and affordability initiative under GI 2025—similar to GI 2025’s Basic Needs Initiative—CSU campuses could begin addressing housing insecurity in students and working toward alleviating material hardship in students. This would be a similar approach as to what UCOP did. This initiative would work to address housing insecurity as a material hardship negatively impacting student performance and graduation rates.

To develop this proposed initiative, the state would need to provide funding to CSU campuses. Individual CSUs would also need to work with their local communities and governments in order to effectively develop housing structures and solutions that are appropriate for their respective area. In order for this change to be implemented, the California State Universities would need to lobby at the state level to gain legislative support and state funding. The CSUs would also need to create accountability measures and graduation rate improvement goals in order to effectively implement this initiative.

## **Recommendations**

In order to effectively address CSU graduation rates and the housing insecurity issues CSU students are facing, I recommend a combination of approaches. The CSU administration should:

- Develop a housing equity and affordability initiative under Graduation Initiative 2025, with individual task forces at each campus.
- Prioritize accessibility to consumption-based resources such as food, transportation, and clothing in an effort to alleviate material hardship.
- Continue to develop CSU Graduation Initiative 2025 and strive to meet the 2025 target graduation rates.
- Engage with local community organizations and nonprofits near CSU campuses in order to equitably and efficiently serve CSU students at their respective campuses.

Developing a housing equity and affordability initiative under Graduation Initiative 2025 would imitate the UCOP Student Housing Initiative by creating a specific initiative to support students struggling with housing affordability and insecurity. I recommend creating such an initiative because it was successful for the UCs; systemwide, the UCs added fourteen thousand new housing beds for UC students (The University of California Office of the President). While that is not enough to completely eradicate student housing insecurity, it is a promising start, and these housing beds are a direct result of the UC Student Housing Initiative. Therefore, a similar initiative at the CSU level would serve students by providing affordable housing options. This would likely be an expensive undertaking—UCOP’s Student Housing Initiative was a multimillion-dollar effort and spanned over the course of four years; however, this initiative would help students, especially those most at-risk, stay enrolled and receive their degree.

Prioritizing accessibility to consumption-based resources such as food, transportation, and clothing would alleviate material hardship in students. Housing insecurity is only one form of material hardship, and students who experience material hardship often experience more than one form. Individual CSU campuses should have student pantries, student closets, and free local transportation options for students in order to alleviate material hardship related to food, clothing, and transportation. Similar to establishing a student housing initiative, I predict this would help students—with an emphasis on at-risk and other marginalized students—stay enrolled and receive their degree. A program to address these forms of material hardship would have fairly minor costs

to the CSU system, as opposed to an expensive and difficult housing initiative. CSU administrators should work with their respective student governments and student bodies in order to address the material hardship students experience.

Continuing to develop CSU Graduation Initiative 2025 and striving to meet the 2025 target graduation rates would increase the amount of degree holders in California and improve CSU graduation rates. By meeting target goals, the CSUs will increase graduation rates and allow more degree holders to enter the California workforce. Additionally, the CSUs can set new, higher targets and continue to seek improvement in their graduation rates. Preliminary data suggests that Graduation Initiative 2025 has been successful thus far, so I recommend that the California State University administration proceed as they are. I also recommend they collect demographic and academic data throughout the duration of Graduation Initiative 2025 to learn more about factors affecting graduation and initiatives improving graduation rates. As this is the course of action currently being taken, I do not predict any unforeseen consequences or tradeoffs that the CSU administration has not already accounted for.

Finally, engaging with local community organizations and nonprofits near CSU campuses would allow campuses to equitably and efficiently serve their respective students and communities. There are twenty-three campuses across the state of California, and each campus has a different community and culture. It is important that the CSUs work within their respective local contexts to best address the needs of students. I anticipate that this would be a difficult process, requiring clear communication from CSU administration, CSU students, local government, local organizations, and CSU and local stakeholders. The CSU administration would need to find community members and students interested in developing this type of work at a grassroots level in order for it to be successful. However, engaging with the community will lead to community interest in student wellbeing, thus leading to more resources, initiatives, support, and opportunities for CSU students. This would ultimately improve the graduation rates through community advocacy.

## **Conclusion**

Previous research indicates that there is a strong relationship between material hardship and college graduation rates, with increasing material hardship leading to lower graduation rates (Broton & Goldrick-Rab, 2016; Hanson, 2021a). When considering how powerful and important to the California economy the CSU system is, it becomes necessary that administrators and policymakers seek to alleviate the material hardship—specifically housing insecurity due to California’s high cost of living—that afflicts CSU students and prevents students from graduating. I recommend that policymakers seek to implement a model similar to the University of California Student Housing Initiative for the California State Universities. I also suggest that administrators prioritize the growth and development of Graduation Initiative 2025, partner with local community organizations to create sustainable and equitable solutions for student needs, and create measures to alleviate other forms of material hardship. The consequences of inaction are extreme: in the near future, the California workforce may not be able to meet the needs of the California economy due to a lack of degree-holding workers in the state (Johnson et al., 2015). Due to the importance of the CSUs as educational institutions, employers, and producers of the workforce, it is imperative that administrators and policymakers seek to alleviate hardship caused by housing insecurity in students and provide students access to affordable, equitable housing. CSU students deserve the opportunity to attend their university unburdened by housing affordability issues and material hardship.

## References

- Broton, K., & Goldrick-Rab, S. (2016). The Dark Side of College (Un)affordability: Food and Housing Insecurity in Higher Education. *The Magazine of Higher Learning*, 48(1), 16–25. doi.org/10.1080/0091383.2016.1121081
- The California State University. (2017a). *Benefiting California*. www2.calstate.edu/impact/Pages/benefitting-california.aspx
- The California State University. (2017b). *Introduction*. www2.calstate.edu/csu-system/about-the-csu/facts-about-the-csu/Pages/introduction.aspx
- The California State University. (2016, June 24). *Why the CSU Matters*. www2.calstate.edu/csu-system/why-the-csu-matters/Pages/default.aspx
- Fulton, W. (2021, March 3). It Seems like All of California Is Moving to Texas. Is That True? *The Kinder Institute for Urban Research*. kinder.rice.edu/urbanedge/2021/03/03/californians-moving-to-texas-covid-migration
- Gordon, L. (2019, August 15). *National College Dropout Rates Are a Scandal, UC Author Says*. EdSource. edsources.org/2019/national-college-dropout-rates-are-a-scandal-uc-author-says/616248
- Hanson, M. (2021a). *College Dropout Rate [2021]: By Year Demographics*. EducationData. educationdata.org/college-dropout-rates
- Hanson, M. (2021b). *College Graduation Statistics [2021]: Total Graduates per Year*. EducationData. educationdata.org/number-of-college-graduates
- Johnson, H., Mejia, M. C., & Bohn, S. (2015). *Will California Run Out of College Graduates?* Public Policy Institute of California. www.ppic.org/content/pubs/report/R\_1015HJR.pdf
- Lotkowski, V. A., Robbins, S. B., & Noeth, R. J. (2004). *The Role of Academic and Non-Academic Factors in Improving College Retention. ACT Policy Report*. American College Testing ACT Inc. files.eric.ed.gov/fulltext/ED485476.pdf
- Nance, A. A. (2016). *The Effect of Residential Housing on Graduation Rates among Students at a Rural Mississippi Community College*. [Doctoral

dissertation, Mississippi State University]. *Theses and Dissertations MSU*. [scholarsjunction.msstate.edu/td/4370](https://scholarsjunction.msstate.edu/td/4370)

Office of the California Governor Gavin Newsom. (2021). *Budget Summary 2021–22: Higher Education*. [www.ebudget.ca.gov/2021-22/pdf/BudgetSummary/HigherEducation.pdf](http://www.ebudget.ca.gov/2021-22/pdf/BudgetSummary/HigherEducation.pdf)

Porter, E. (2013, June). Dropping Out of College, and Paying the Price. *The New York Times*. [www.nytimes.com/2013/06/26/business/economy/dropping-out-of-college-and-paying-the-price.html](http://www.nytimes.com/2013/06/26/business/economy/dropping-out-of-college-and-paying-the-price.html)

Skelton, G. (2020, May 3). Column: California's Population Growth Has Slowed. Blame the Exorbitant Housing Costs. *Los Angeles Times*. [www.latimes.com/california/story/2021-05-03/skelton-census-population-housing-costs](http://www.latimes.com/california/story/2021-05-03/skelton-census-population-housing-costs)

The University of California Office of the President. *Student Housing Initiative*. Retrieved May 4, 2021, from [www.ucop.edu/student-housing-initiative](http://www.ucop.edu/student-housing-initiative)

United States Census Bureau (2021, January 4). *American Community Survey (ACS)*. [www.census.gov/programs-surveys/acs](http://www.census.gov/programs-surveys/acs)

United States Census Bureau, & United States Department of Housing and Urban Development. (2021, April 23). *Average Sales Price of Houses Sold for the United States*. FRED, Federal Reserve Bank of St. Louis. [fred.stlouisfed.org/series/ASPUS](http://fred.stlouisfed.org/series/ASPUS)

## Granma: More Than a Boat

MARIA COLLAZO



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*WRITER'S COMMENT: For UWP 102C: Writing in History, we were tasked with developing a research project centered around creating an original argument on a historical topic or public history site that demonstrated our ability to utilize primary and secondary sources effectively. After hearing that public history consists of analyzing museum exhibits, memorials, and other sites accessible to the public, my mind was instantly taken to the UC Davis study abroad trip I took to Cuba in August 2019. Not only did I take courses on the riveting topic of Latin American Revolutions at the epicenter of one of the most infamous revolutions in all of history—I also visited the majority of sites key to the Cuban Revolution itself. Fidel Castro's yacht, named Granma, stood out because of its role in taking Castro back home to liberate Cuba from corruption and widespread inequality. After the life-changing and vibrantly informative trip I took to Cuba, I felt I could do the Granma justice by capturing its immense significance to Cuban history after the Revolution.*

*INSTRUCTOR'S COMMENT: Who will ever forget the misadventure of the Granma after reading the introduction to Maria Collazo's article? Here, Maria achieves what many history writers strive to do; she brings the past alive with a combination of factual detail and narrative force that draws readers in and leaves us wanting to know more. Maria, however, does more than just tell us an interesting story about the past. She shows us that the significance of the Granma lies not only in its literal journey bearing Fidel Castro and his men to Cuba 1956, but in the figurative uses the yacht has served, and continues to serve, as vessel for conveying and controlling the narrative of the Cuban Revolution*

*itself. Her argument persuades because she has done the hard work of the historian—finding and analyzing primary and secondary sources, drawing upon her own observations from her site visit of the historic yacht while studying abroad and, above all, gracefully putting these materials together in the service of her own interpretation of the Granma as a site of public history.*

—Melissa Bender, University Writing Program

One stormy night in November 1956, a young, exiled Fidel Castro had a dream. He was going to be at the forefront of the movement for liberation in his home country of Cuba. Originally made for twelve passengers, eighty-two men squeezed onto a small yacht named Granma and set off on their journey to free Cuba. Shortly after embarking on the voyage, passenger Ernesto “Che” Guevara remembered a “frenzied search for anti-seasickness pills” that were never found. The crew of revolutionaries merrily “sang the Cuban national anthem and the ‘Hymn of the 26th of July’ for about five minutes,” when the trip took a turn for the worse.<sup>1</sup> Men were seen clenching their abdomens, piled over buckets, and laying in “strange positions” unable to move for fear that they would release whatever they had eaten the day before.<sup>2</sup> The trouble continued as the yacht arrived two days later than expected and at the wrong target location. After wandering for days, the crew was spotted by the Cuban army. When Castro’s plan began falling apart around him, he and fifteen of his men that had not been captured, lost, or murdered regrouped and sought refuge in the surrounding Sierra Maestra mountains. For seventeen months, the men prepared for the fight of their lives and when the time came, they swept in and emerged victorious.<sup>3</sup> More than a small rickety yacht, the Granma that they traveled on would become symbolic as the physical and psychological vehicle that sped the Cuban Revolution into fruition.

With a new regime in place, Fidel Castro made the 26th of July movement relevant in the lives of Cubans by making his journey to

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1 The Editors of Encyclopaedia Britannica, “26th of July Movement,” Encyclopaedia Britannica, 20 July 1998. [www.britannica.com/topic/26th-of-July-Movement](http://www.britannica.com/topic/26th-of-July-Movement). Founded by Fidel Castro in 1955, the 26th of July Movement (Movimiento 26 de Julio) was a revolutionary organization credited with overthrowing the Fulgencio Batista regime in 1959.

2 Thomas C. Wright, “Fidel Castro’s Road to Power, 1952–1959.” In *Latin America in the Era of the Cuban Revolution and Beyond* (New York: Praeger, 1991), 10.

3 *Ibid.*, 11.

power part of a longer revolutionary folklore in Cuba. One way he did this was by integrating the importance of the *Granma* into the fabric of Cuban history. Whenever the island fell on difficult times, they could rejoice in the fact that they were part of the larger fight to rid themselves of dictators that oppressed them. Although part of the allure of this revolutionary tradition included emphasizing certain events and perspectives of the Cuban Revolution over others, the value of the *Granma* in the eyes of Cubans would not waver. Through the inclusion of firsthand accounts that witnessed Castro's rule, sources within and outside of the island give insight about the *Granma* Memorial as a key artifact in the Museum of Revolution and its role as part of a larger plan to change the narrative about what a communist government was really like. While some journalists critiqued Castro's methods to promote an ideology that painted him as a hero, others praised his courage and to this day see him as a liberator. Regardless of what perspective is accepted, one thing is clear: post-revolution, the *Granma* was employed as an instrument in Fidel Castro's regime to positively rewrite the way Cubans thought about their place in history and the way the revolution was understood around the world.

After the overthrow of Fulgencio Batista in 1959, Fidel Castro established himself as the new president of Cuba. Castro's administration vehemently went to work on capturing a Cuban history to be proud of through several mediums, one being museums. In 1974, the presidential palace in Havana, Cuba would be turned into the *Museo De La Revolución* (Museum of the Revolution), dedicated to covering the exploits of Fidel's 26th of July movement.<sup>4</sup> The *Granma*, an 18-meter-long, rundown, diesel-powered yacht was moved from its place in Havana Bay into its own permanent outdoor exhibit behind the museum. Encased in glass as part of the *Granma* Memorial under the *Pabellon Granma* (*Granma* Pavilion), it is surrounded by several planes, vehicles, and missiles utilized in other key events of the revolution. Despite being guarded by soldiers 24 hours a day, seven days a week, year-round, the *Granma* has been open for the public to see since its opening.<sup>5</sup> What is remarkable about the Museum of the Revolution is that it houses so many crucial artifacts within its walls. Tourists could stay in Havana and see some of the most revered relics of the Cuban Revolution, ranging from Che

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<sup>4</sup> "Museo de la Revolución," 2018, [www.lahabana.com/guide/museo-de-la-revolucion/](http://www.lahabana.com/guide/museo-de-la-revolucion/)

<sup>5</sup> "*Granma* Memorial," 1976.

Guevara's beret to a Soviet tank used by Castro. I believe the museum with exhibits like the *Granma* Memorial, serve a greater purpose beyond just documenting a radical period in Cuba's history. Its easy accessibility to tourists from around the world also coincides with what some scholars believe was a tactic used by Castro to export a more positive, Soviet-aligned understanding of the Cuban revolution abroad.

Before pondering the purpose of emphasizing certain artifacts of Cuba's past, it is important to explore where this perspective came from. Cuba began pushing the idea of a glorious revolution following the removal of Fulgencio Batista's regime. At that crucial moment, Castro's 26th of July Movement was not well enough organized nor adequately versed in government policy to outline the next steps for the country. Thus, the Communist Party of Cuba stepped in and modeled the new Cuban government after the "Soviet bloc countries of Eastern Europe."<sup>6</sup> How did this manifest? Castro's regime dissolved capitalism on the island, collectivized agricultural production by placing it under government control, nationalized millions of dollars of private property, and forged tight relations with the Soviet Union.<sup>7</sup> Essentially, the two nations formed a partnership. Cuba received much needed economic and military support. In return, the Soviet Union attained a new ally in Castro, to support their own military endeavors and further promote Marxist-Leninist ideology as the sole method of running a corruption free socialist state.<sup>8</sup> Castro welcomed the permeation of Marxist-Leninism throughout Cuban society and culture but adapted it to highlight his successes and those of his guerrilla revolutionaries. Starting with educational institutions like museums, Castro sought to recreate the Soviet framework to ensure the success of the Cuban Revolution.

According to researcher in cultural anthropology Pablo González, following 1975, museums were transformed from impartial institutions

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6 Franklin W. Knight, and Sandrah H. Levinson, "Cuba," *Encyclopaedia Britannica*. 17 Mar. 2020, [www.britannica.com/place/Cuba](http://www.britannica.com/place/Cuba). Following World War II, the Soviet Union maintained control of several eastern European countries that became known as the Warsaw Pact alliance (also known as the Soviet bloc/Eastern bloc).

7 Knight and Levinson, "Cuba."

8 W. John Morgan. "Marxism-Leninism: The Ideology of Twentieth-Century Communism." *International Encyclopedia of the Social & Behavioral Sciences* 14, no. 2 (Dec. 2015): 656–662. doi:10.1016/B978-0-08-097086-8.93075-7. Marxist-Leninism was a communist ideology and movement that aimed to replace capitalism through a two-stage revolutionary process. First, to create a political party that would gain control on behalf of the working class and secondly to establish a one-party socialist state.

to those skewed toward a communist agenda. Museums became “instruments of ideological and aesthetics instillation” encompassed by a “Marxist-Leninist worldview,” that sought to eradicate capitalism and implement a dictatorship ruled by the working class.<sup>9</sup> Rather than retell the Cuban Revolution in terms of facts, Castro allowed ideology to sway the way people, events, and artifacts would be described. To understand Cuban history and culture was to accept ideas pushed by the Cuban government as undeniable truth. Regarding the *Granma*, Cuban historians chose to speak about the eighty-two passengers as confident heroes, instead of young untrained men who made a lot of mistakes that got more than two thirds of their crew killed. Castro believed that the revolution was an “extraordinary process of education” and that it was his administration’s duty to “create the consciousness” of the people.<sup>10</sup> Thus, it was in Castro’s best interest to convert Cuba into a state where all aspects of life were restricted to a narrow view of the revolution, because in the eyes of many, he became a liberator and his enemies the tyrants. The idea of the guerilla fighter and all things associated, like the *Granma*, would be ingrained as part of Cuban revolutionary history through constant references that boosted Cuban morale, even when the world portrayed them as massive dependents of the Soviet Union.

Apart from the narrative being advertised by the Cuban government, American journalists for the *Los Angeles Times* Shirley Slater and Harry Basch would take in the Museum of the Revolution through an objective lens in their account of a 1988 Havana. They would describe several museum exhibits and upon seeing the *Granma*, they recited how it was housed in a “huge glass exhibit case like the Viking ships in Norwegian museums,” of Europe.<sup>11</sup> Holding Cuba’s chosen artifacts to the degree of those in museums across the globe proves that Castro was successful in his representation of highlighting a just revolution worth remembering. If even foreigners from a rival nation like the United States could marvel in the glory of an object like the *Granma* without criticizing it as part of a ploy that solely captures a narrow retelling of Castro’s rule, then this narrative of Cuban history would not be so readily contested by others.

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9 Pablo A. González, “Museums in revolution: changing narratives in revolutionary Cuba between 1959 and 1990.” *International Journal of Heritage Studies* 21, no. 3 (2015): 270. doi.org/10.1080/13527258.2014.939102

10 González, “Museums in revolution,” 265.

11 Shirley Slater and Harry Basch. “HAVANA CUBA.” *Los Angeles Times*, 29 May 1988. www.latimes.com/archives/la-xpm-1988-05-29-tr-5454-story.html

More recently, toward the final months of Castro's life in 2016, Jennifer Dickey of *The Public Historian* wrote a review of the Museum of the Revolution that focused on the progress of the renovations being made to various exhibits, including the *Granma* Pavilion. Dickey wrote, "the most notable differences between the older and new exhibits are the presentation of a chronology of the events covered in each room" that include "short, descriptive text in both English and Spanish that relates to the objects" within the cases.<sup>12</sup> Providing information in English could only be a sign that the Cuban government was ready for a wider audience to understand their perspective of the Cuban Revolution. Rather than just view the *Granma*, tourists could now learn its importance to the country as a whole. In rooms that were yet to be updated, there continued to be limited explanations on artifacts with contested histories. To even undergo the renovations in the first place may have also been indicative that Castro was finally willing to move forward with incorporating a more expansive understanding of the country's past, not just spreading a particular ideology as a substitute for the truth. Regardless of any inconsistencies in design, Dickey expressed that, at face value, the chosen artifacts on display created a strong image of Cuban revolutionaries that fought through "impossible odds and despite the continuing imperialist aggressiveness of the United States" to achieve victory. Whether the museum would be able to offer a more "truthful interpretation and inclusion of a history" past the fall of the Soviet Union was yet to be determined.<sup>13</sup> However, Dickey expressed an interest in returning when the long overdue project would be complete. Overall, these three perspectives on the Museum of the Revolution find themselves settling on the understanding of Cuba coming together to solidify their history post-Batista into the story of a new era, the relics of the revolution highlighting the struggle to achieve it.

Aside from lending its name to a province and new national park, the *Granma* initially became ingrained as part of the Cuban Revolution's mythos as the voice of the communist party of Cuba. A 1966 *Time Magazine* article stated that in "Havana's Communist daily *Granma*," Castro explained his quarrel with Peking [now spelled Beijing] about

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12 Jennifer W. Dickey "Museo de la Revolución (Museum of the Revolution)" *The Public Historian* 38, no. 3, (Aug. 2016): 157. doi.org/10.1525/tph.2016.38.3.155

13 Ibid., 161.

how they had “committed an act of economic aggression” by reducing rice shipments to Cuba and sending “huge amounts of propaganda for espionage purposes,” to the Cuban military.<sup>14</sup> The method in which the magazine introduced Castro’s new newspaper was clearly aimed at reminding everyone that as a communist dictator, Castro would use the paper as a mouthpiece to spew his lies and biased opinions. Even further, the article makes a point to criticize Castro for threatening to cut ties with communist ally China, and further aligning his country with the Soviet Union. It was clear that the United States was not buying the narrative of a free Cuba under Castro’s communist regime. The footnote at the end of the article cemented their position; *Granma* was the new communist newspaper, but it was also a “corruption of the word grandmother.”<sup>15</sup>

In “Cuban Communicators,” writers James Carty Jr. and Janet Terry would touch on how Cuba’s communist party in 1976 would now encourage journalists to comply with the parameters that allowed only specific coverage of the regime. *Granma* had become “the nation’s largest and most influential newspaper,” but Castro’s administration still desired that other journalists “devote special attention to the development of a truly revolutionary and socialist style,” in Cuba.<sup>16</sup> Everywhere the *Granma* newspaper fell short, other news sources were burdened with the task of further spreading the ideals of the revolution to Cubans living on the island and abroad. How this is relevant to the *Granma* is in its role as a vehicle of delivery. Back in 1956, the small yacht delivered the revolutionary guerillas to Cuba. Then, as a newspaper, *Granma* would deliver information as a direct line of communication between Castro and the Cuban citizens. Similarly, the *Time Magazine* article and “Cuban Communicators” emphasized that Castro wanted more than to just unify his country. He was going to use several mediums of communication and entangle them with specific historical events to create an environment where a dictatorship could survive—an environment where the government was directed by and for the working class. Naming the national newspaper *Granma* was not just a reference to a boat, it was all part of a strategy to keep Castro in power by controlling the way Cubans

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14 “Cuba Down with Imperialism—12,000 Miles Away,” *TIME Magazine*, 18 Feb. 1966. [content.time.com/time/subscriber/article/0,33009,899011,00.html](http://content.time.com/time/subscriber/article/0,33009,899011,00.html)

15 Ibid.

16 James W. Carty Jr., and Janet Liu Terry. “Cuban Communicators.” *Caribbean Quarterly: A Journal of Caribbean Culture* 22. no. 4 (1976): 59–67. doi.org/10.1080/00086495.1976.11829278.

understood his position of authority over them. To Cuban citizens, Castro was more than a leader: he was a father to a revitalized nation that thrived to protect its citizens from inequality and corruption. Since the communist party could not convince everyone that there was only one way to interpret the events of the revolution, news outlets, radio stations, and museums ensured the 26th of July movement would be praised by presenting only the information that was most beneficial to its understanding. To admit the revolution was flawed was to admit that the entire movement was a mistake, and through the lens of a revolutionary consciousness, that could never be so.

Today, Cuba has kept the memory of the *Granma* voyage alive and well. On one of the few Cuban websites I could access, I discovered a special edition of the newspaper *Granma* that celebrated the 50th anniversary of the yacht's voyage. "Nunca se escuchó una sola queja, ni un lamento, ni en esos momentos ni en los que vinieron después, que serían crudos y difíciles, sino todo lo contrario, en medio de toda la tensión siempre hubo una broma o un chiste a flor de labios."<sup>17</sup> This article was meant to highlight the bravery of the eighty-two men that put their lives on the line for the sake of their country. Additionally, it invoked a sense of respect for the insurgents because they made the ultimate sacrifice to liberate all Cuban citizens from the oppression. "Así de esa manera, con absoluto desprendimiento y patriotismo hicieron aquella proeza y desde aquel pequeño yate fundaron una invencible fuerza que, como dijo el poeta, brilla con luz propia y nada puede apagarla."<sup>18</sup> Whether an ode to the guerilla fighters or complete propaganda, there is no doubt that the language surrounding the revolution was emotionally charged. Instead of including instances of anxiety, the author chose to recite the most positive moments of the *Granma's* voyage to raise Cuban morale.

Thus, the *Granma* would represent all the best sides of the Cuban Revolution. For better or worse, Castro would use this revolutionary lore to unify Cuban citizens when most of the world turned a blind eye to the difficult position they had been put in. Forging stability came at the cost

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17 "Lo que brilla con luz propia, nada lo puede apagar." *Granma Cuba Si*. (Havana: Central Committee of the Communist Party of Cuba). Translation: "There was never a single complaint, nor a lament, neither in those moments nor in those that came later, which would be crude and difficult, but quite the opposite, in the midst of all the tension there was always a joke or a joke on the surface of lips."

18 Ibid. Translation: "Thus in that way, with absolute detachment and patriotism they did that feat and from that small yacht they founded an invincible force that, as the poet said, shines with its own light and nothing can extinguish it."

of hiding the shortcomings of Fidel Castro's 26th of July movement for what Castro and many revolutionaries believed would help them achieve a more just world. More than just a boat, the *Granma* became the symbol for that small sliver of hope, that chance to initiate a new chapter in history.

## Bibliography

- Carty Jr., James W., and Janet Liu Terry. "Cuban Communicators." *Caribbean Quarterly: A Journal of Caribbean Culture* 22, no. 4 (1976): 59–67. doi.org/10.1080/00086495.1976.11829278. www.tandfonline.com/doi/abs/10.1080/00086495.1976.11829278
- "Cuba Down with Imperialism—12,000 Miles Away." *TIME Magazine*, 18 Feb. 1966. content.time.com/time/subscriber/article/0,33009,899011,00.html
- Dickey, Jennifer W. "Review: Museo de la Revolución (Museum of the Revolution)" *The Public Historian* 38, no. 3 (Aug. 2016): 155–161. doi.org/10.1525/tph.2016.38.3.155
- González, Pablo A. "Museums in revolution: changing narratives in revolutionary Cuba between 1959 and 1990." *International Journal of Heritage Studies* 21, no. 3 (2015): 264–279. doi.org/10.1080/13527258.2014.939102
- "*Granma* Memorial." Museum of the Revolution, Havana, Cuba, 1976.
- Knight, Franklin W., and Sandra H. Levinson. "Cuba," *Encyclopaedia Britannica*. 17 Mar. 2020. www.britannica.com/place/Cuba
- "Lo que brilla con luz propia, nada lo puede apagar." *Granma Cuba Si*. (Havana: Central Committee of the Communist Party of Cuba). www.granma.cu/granmad/secciones/50\_granma-80\_fidel/la\_travesia2.html

- Morgan, W. John. "Marxism-Leninism: The Ideology of Twentieth-Century Communism." *International Encyclopedia of the Social & Behavioral Sciences* 14, no. 2 (Dec. 2015): 656-662. doi:10.1016/B978-0-08-097086-8.93075-7
- "Museo de la Revolución." *LaHabana.com*, 2018. [www.lahabana.com/guide/museo-de-la-revolucion/](http://www.lahabana.com/guide/museo-de-la-revolucion/)
- Slater, Shirley and Harry Basch. "HAVANA CUBA." *Los Angeles Times*, 29 May 1988. [www.latimes.com/archives/la-xpm-1988-05-29-tr-5454-story.html](http://www.latimes.com/archives/la-xpm-1988-05-29-tr-5454-story.html)
- The Editors of Encyclopaedia Britannica. "26th of July Movement," *Encyclopaedia Britannica*, 20 July 1998. [www.britannica.com/topic/26th-of-July-Movement](http://www.britannica.com/topic/26th-of-July-Movement)
- Wright, Thomas C. "Fidel Castro's Road to Power, 1952-1959." In *Latin America in the Era of the Cuban Revolution and Beyond*, 3-19. New York: Praeger, 1991.

## The Grapevine Compromise

FELICITY BARRON



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*WRITER'S COMMENT: With every new fact I learn from an environmental science class, my brain always goes straight to work, imagining how I could best explain it to my father. He's intelligent and always listens to what I have to say, but he's a handyman and a small-town planning commissioner, who doesn't have much experience in science or academia and has grown calloused against all the ecological horror stories the news has thrown his way through the years. In other words, he's an excellent representative of the general public, which scientists desperately need to communicate with effectively if we ever hope to make cooperative, global conservation plans work. So, for this assignment, I endeavored to write to a lay audience, with my father in mind. Hopefully, the past, present and predicted future of the Grapevine watershed is explained here in a way that could capture the interest of the average American, who may have driven through this watershed, not yet aware of all the life just under their noses.*

*INSTRUCTOR'S COMMENT: I can't say that Felicity Barron stood out from her fellow students from the first day of class because I never saw all of the students together in a classroom. As were many courses in Fall 2021, UWP 102G, section 001 was both remote and asynchronous, completely separated from any actual place. I haven't been to the Grapevine watershed that she writes about; like anyone else who's driven I-5, I've merely passed through it. My fleeting vehicular encounters might as well have been virtual. Felicity has written an essay that makes that place real to me for the first time, both the ecological balance that makes it a haven for endangered fauna and the precarious balance in which competing human agendas are currently held. She*

*was helped in accomplishing this by the attentive reviews and honest (though virtual) discussions of her peers. All of the students in the class deserve recognition for their thoughtful discussions conducted in trying circumstances, and all had their part in Felicity's recognition here.*

—Laurie Glover, University Writing Program

The well-traveled California Interstate Highway 5 runs through the entire length of California, Oregon, and Washington, from Mexico to Canada's border. The stretch that winds past the Tehachapi mountains, between Los Angeles County and the City of Bakersfield, forms a major thoroughfare for travel between Northern and Southern California. This section is colloquially called "The Grapevine" for its looping course through the mountains. While the area around this portion of the interstate is easily recognizable by name to many Californians, the Grapevine watershed that the I-5 runs through is a largely underappreciated plot of untouched nature, harboring an oasis of endangered biodiversity.

The word "watershed" is simply the common North American term for a drainage basin or catchment. Thus, watersheds are areas of land, divided up according to where the precipitation falls on them and eventually flows. For example, the land making up both sides of a river is considered one watershed. Similarly, the Grapevine watershed's defining boundary is the top ridge of the Tehachapi mountain range, as any rain or snow that falls on the North-facing slope flows down in a northerly direction and collects in a small seasonal stream. More precisely, the Grapevine watershed encompasses half of the mountains, both the low slopes, and the relatively flat, open area at their base.

The Grapevine watershed is a primarily undeveloped, chaparral ecosystem, characterized by warm weather, shrubs, and very little precipitation. Such sparse rain is a two-fold problem for the animals that live there. First, because rain is rare, standing bodies of water for animals to drink from are few and far between for most of the year. Second, the water scarcity can't support tree growth nor any dense foliage, which leaves animals without any natural shelter from hot sunlight or predators. Only the animals that have evolved over thousands of years to survive these conditions can live in such a seemingly uninhabitable environment. To tolerate the lack of precipitation, these carnivores and omnivores

don't drink water at all. They instead rely on the liquid of their food to provide them with hydration. These same animals have adapted to dwell in underground burrows, which keeps them out of the sun and out of predators' sight.

Today, these specialized creatures face a different problem: habitat loss. Before European encroachment in the 1700s, the animals of the Grapevine watershed were widespread across Southern California and part of the Central Valley. Now, most of their historic range is uninhabitable for them, converted to agricultural land and concrete cities instead. Because the Grapevine watershed has, as of yet, been left almost entirely undeveloped by human enterprise (more so by chance than for any given reason), it's one of the last places left available for many Southern California native chaparral species to live. Most of the flora and fauna in the Grapevine watershed still thrive locally, but too many of the species found here are down to critical numbers nationwide. They're approaching an extinction threshold, a population size too small to maintain constant or positive population growth, and many species with the most important roles in the ecosystem are now classified as endangered at the state or federal level. Such at-risk species include burrowing owls, San Joaquin kit foxes, and the San Joaquin kangaroo rat. All are facing extinction due to habitat loss from change in land use. In particular, burrowing owl populations in the U.S. have declined for thirty years, despite being ranked a species of special concern in California and being federally protected. In the Grapevine watershed, burrowing owls are an important top predator for the ecosystem, as they feed on small mammals, insects, lizards and amphibians. By eating whichever food source is most plentiful to them at the time, burrowing owls prevent any single prey species population from becoming too large and dominating the others. If, for example, one lizard species began to outcompete another in predating on insects, the burrowing owl would hamper that dominant species' growth and keep them from overconsuming the native bugs. Essentially, the high biodiversity of the Grapevine watershed wouldn't exist without the burrowing owl, and thus, their steadily decreasing population size may bring drastic, negative consequences on the ecosystem.

Another native to the Grapevine watershed, the San Joaquin kit fox, is currently at even higher risk of extinction, as only approximately seven thousand individuals are left in the wild. The San Joaquin kit fox's range once extended from the Tehachapi mountains all the way North to the

base of Mt. Diablo, near modern-day Oakland. However, due to decades of ongoing habitat destruction, today they're left only with fragmented pockets of land to survive in. The Grapevine watershed is one of these final pockets.

Vast open space to hunt, large dirt patches for digging elaborate nests, the absence of any predators, and flourishing small mammal populations all together form the necessary environment San Joaquin kit foxes need to live. They're an interesting species, in that they're the nation's smallest native canine, but more pragmatically, their presence on the Grapevine watershed indicates that the watershed is currently in good condition overall, as the San Joaquin kit fox is considered an umbrella species. This means it functions as a paradigm for the animals of their habitat as a whole. Because the San Joaquin kit fox shares many of the same resource requirements as other California chaparral species, conservationists measure the fox's wellbeing in any one area to use as a proxy of the health and abundance of other species in the food web as well. Therefore, the fact that the Grapevine watershed has retained its San Joaquin kit fox populations indicates that the other species in the community are still receiving all the resources they need too.

Most crucially, the presence of the San Joaquin kit fox reassures conservationists that the endangered San Joaquin kangaroo rat still survives on the watershed. "San Joaquin kangaroo rat" is a blanket term for three extremely similar subspecies of kangaroo rat, all found in the same area, all with powerful hindlegs that allow them to hop like an Australian kangaroo, and all performing practically equivalent ecological roles. So, biologists refer to them collectively as one species. They're considered a keystone species, meaning the San Joaquin kangaroo rat has a relatively massive importance on the ecosystem's health. First, as its diet is made up primarily of seeds, the San Joaquin kangaroo rat disperses the next generation of trees and shrubs through its excrement, ensuring a diverse mixture of plants grows in any single area. Secondly, as prey, this little mammal is a staple food source to a wide array of creatures. Hawks, snakes, condors, eagles, and coyotes consume them, and according to the Endangered Species Recovery Program at CSU Stanislaus, San Joaquin kangaroo rats make up the largest portion of the San Joaquin kit fox's diet. And third, after death, San Joaquin kangaroo rats' abandoned burrows are inherited by other burrowing animals in the community. Many species, such as the burrowing owl, don't build their

own homes from scratch. Instead, they search for pre-existing holes dug by kangaroo rats or ground squirrels. For these three reasons, if the San Joaquin kangaroo rat were ever eradicated from the area, the Grapevine watershed would quickly degrade, rapidly losing biodiversity.

Luckily, the Grapevine watershed retains its healthy ecosystem today, but that's only because it has had the good fortune of never being completely paved or plowed over. For most of history, Kitanemuk Native Americans were the only people living on this land. Their communities were located in the Tehachapi mountains and foothills by Castaic Lake until the 1840s, when Mexico divided up over 200,000 acres of that space into five land grants to give to Mexican citizens. The land changed hands again almost immediately after however, when Mexico lost against the U.S. in the Mexican War (1846–1848). By the end of it, Mexico had lost approximately one third of its territory (property later becoming the states of Utah, Arizona, Nevada, New Mexico, and California). Soon after, the U.S. gave a large portion of land on the Grapevine watershed to U.S. Lieutenant Edward Fitzgerald Beale for his contributions to the war. This property today is called "Tejon Ranch." Reportedly because Lt. Beale had made friends with some of the Native Americans settled on or nearby Tejon Ranch, he decided to establish a reservation on a 75,000-acre plot, and named it the Sebastian Indian Reserve. This was his first accomplishment as the newly appointed Superintendent of Indian Affairs in California after the war. Thus, Beale created the first Native American reservation in California.

Beale's goal was to establish a self-sufficient, agriculture-based community on the reservation, but most of the eight hundred or so new occupants originated from hunting and gathering tribes. Recognizing the problem that posed, Beale hired European-American farmers to teach them agricultural skills and about homemade textile production. However, cultivation turned out to be largely unsuccessful, as frequent drought, insect infestations, and floods made farming in this area exceptionally difficult. Thus, after only eight years, as soon as Beale took up a different government position, the reservation was quickly shut down by his successor. Incoming White settlers then complained that the Native Americans were taking up land that they'd prefer to try farming themselves, so by 1864, the inhabitants were marched off the land at gunpoint by U.S. soldiers, all the way to Tulare County. After that, various White settlers came, built wooden houses, planted modest

farms, then left again. The Grapevine watershed's aridity is, and was, not conducive to farming, so too few people ever lived on the watershed at any single point in time to form communities or lasting neighborhoods. And the natural ecosystem had no problem adapting to the sparse sprinklings of human newcomers.

Much later, in 1912, Lt. Beale's son sold Tejon Ranch to a group of businessmen, and in 1936, the Tejon Ranch Company was incorporated. The property remained in its natural state for almost a century after that, except for the construction of Interstate Highway 5 in the 1960s. Only at the turn of the millennium did the Tejon Ranch Company begin working on two new housing development projects along Interstate 5. The first of these, "Centennial," is set to be built just outside the watershed but in an area that's still part of the endangered Grapevine watershed species' range. However, the second, "Tejon Mountain Village," will be placed well within the watershed, in the Tehachapi mountains. Tejon Ranch Company initially faced massive pushback by environmental justice organizations from all over the state and country in 1999. Plans were stalled until 2008, when finally a deal was brokered between the Tejon Ranch Company and five major groups: the Sierra Club, The Natural Resources Defense Council, California Audubon, Planning and Conservation League, and the Endangered Habitats League.

While most housing development projects are destructive to the local environment and further contribute to global climate change, the environmental justice organizations at odds with the Tejon Ranch Company saw these two development projects as especially capricious. First, Tejon Ranch and the Grapevine watershed contains over twenty federally recognized endangered species whose biggest threat is habitat loss. Second, building housing communities in the middle of nowhere may be appealing to potential residents who'd enjoy scenic views and can afford long commutes to work, but the nonprofit groups opposing the projects asserted that these new, remote communities would leave a massive carbon footprint. Current greenhouse gas emissions have already exceeded a safe amount and now harm ecosystems across the globe. Any human activities that further push the gaseous carbon levels up will increase the frequency and extent of both natural disasters and shifts in species' habitat ranges in response to warmer temperatures. The opposing organizations knew, and emphatically explained, that climate change poses a threat to the Grapevine watershed ecosystem, as well as to every ecosystem around the world.

Quite notably, the housing projects are extremely remote and would require homeowners to drive over fifty miles a day to reach a city wealthy enough to provide high-paying jobs. Tejon Ranch Company's suburban housing won't be affordable to the average minimum-wage worker, such as those who keep the local distribution centers and truck stop restaurants running (which are currently the only existing or planned commercial infrastructure on Tejon Ranch). Instead, they live in the distant cities outside Tejon Ranch. As such, both the Tejon Ranch residents *and* workers will be forced to make long commutes to and from work each day, essentially creating a new, giant source of greenhouse gasses. These isolated communities will produce an astronomically larger carbon footprint than a community built on the outskirts of a metropolitan area would. Somewhat surprisingly, however, it wasn't the minor improvements to the energy efficiency of the housing projects (which helps lower the housing projects' overall carbon footprint) that the company proposed which sold the deal. In 2008, the opposing organizations agreed to allow Tejon Ranch Company to build their projects without any further pushback only after Tejon Ranch Company created a federally recognized, nonprofit land trust called the Tejon Ranch Conservancy. The company then proceeded to give them 240,000 of their 270,000 total acres.

Today, a few small Native American groups, fighting for rights to Tejon Ranch land, and the Center for Biological Diversity, are still unappeased. The Center is larger and better funded than the Native American rights groups, and so the organization has persisted for years in pursuing lawsuits against Tejon Ranch or the Kern County Board of Supervisors who approve new construction on the watershed. Occasionally, the Center wins these lawsuits. The organization's members believe that all development is unacceptable encroachment and that there's no room left for compromise when it comes to habitat loss. Membership is formed around the belief that humanity has already taken more than its fair share of Earth's resources, and so asking for, or *taking*, yet more is blasphemy. So far, the Center's lawyers have successfully stalled building by pointing out small administrative mistakes that Tejon Ranch Corporation has made during permitting and by alleging that the project's environmental impacts report contains inaccuracies. Additionally, in 2014, Tejon Ranch Corporation proposed a third housing project, called "Grapevine," to be built along the I-5 as well, between Centennial and Tejon Mountain Village. This only raised the Center's discontent.

As of 2020, the projects remain stalled, but the Tejon Ranch Company displays no intention of giving up yet. Once the Center cannot find any more small flaws in the paperwork over which they can sue Tejon Ranch Corporation, there'll be no legal recourse left to prevent them from beginning construction. The Center's no-growth mindset aligns neither with the attitudes of the landowners, nor the local government of Kern County, so the Center's unlikely to prevail in the end. Ultimately, though building Tejon Mountain Village, Grapevine, and Centennial would mean further shrinking the land and resources available to wildlife, the Tejon Ranch Company's proposals are not a final nail in the coffin for the Grapevine watershed ecosystem. Plus, while the projects' carbon footprint is undeniably ridiculously large, the projects do minimize commute times in one way: by being built right along the highway, rather than further out into the mountains. Either way, by no-growth environmentalist standards, this compromise may still seem like the opposing organizations have chosen to settle. Given the plethora of problems that humanity's negligence has already caused (e.g. climate change, sea level rise, hunting animal species to extinction, air pollution, deforestation, introducing invasive species, etc.), any further harm to the last preserved locations left in California may seem outrageous. Alternatively, to those who sympathize with the plight of being rich with land that possesses high profit potential, any obstacles that outside organizations or governments may present, standing in the way of a landowner (in this case a corporation) doing what they choose with their private property, may seem more atrocious. Yet, many Californians likely fall somewhere on the spectrum between these two extremes. The value in protecting keystone species on the brink of permanent extinction is not easily ignored, and neither is the importance of protecting property rights. This compromise is a rare dispute resolution that proves that bargaining within a capitalist economy, and going through the court of law to reach a mutually acceptable agreement can actually work. With this deal, the organizations that opposed Tejon Ranch Corporation's initial plans will have to accept that the burrowing owls, San Joaquin kit foxes, and the San Joaquin kangaroo rat will lose even more habitat to new suburban houses, Starbucks locations, and golf courses, but they gained a guarantee that the majority of this crucial land will be protected from similar destruction in the foreseeable future. Meanwhile, though the Tejon Ranch Corporation has been impeded from attaining

unfathomable riches that could've come from developing all 270,000 acres of their property, they gained plenty from the deal as well. For one, Tejon Ranch Company's now allowed to get away with destroying critical habitat for personal profit. Besides that, they gained good press from the large land donation, they possibly eased the strain of high housing prices in adjacent cities by providing more homes to buyers, and they added market value to their new properties by securing natural scenery that's guaranteed to remain unsullied for years to come. Essentially, neither party in the dispute is completely content, which is a good litmus test for a fair compromise. But this is still too rare an outcome, in the twenty-first century, for us to assume that we've finally become an intelligent, civil, and peaceful society that effectively coexists with nature. Therefore, this deal sets a precedent. It's an example of a fair compromise between purely human and purely ecological interests that should be looked to moving forward by other communities facing similar important decisions in resource management.

## Works Cited

- The Bakersfield Californian. (2016, December 1). *TIMELINE: 150 Years of Kern County History*. Bakersfield. [www.bakersfield.com/special/150-years/timeline-150-years-of-kern-county-history/article\\_3b1dbe9c-ece6-50d6-8b44-88fb09a8507a.html](http://www.bakersfield.com/special/150-years/timeline-150-years-of-kern-county-history/article_3b1dbe9c-ece6-50d6-8b44-88fb09a8507a.html).
- Brown, N. L., Johnson, C. D., Kelly, P. A., & Williams, D. F. (n.d.). *San Joaquin kit fox*. Endangered Species Recovery Program. Retrieved October 23, 2020, from [esrp.csustan.edu/speciesprofiles/profile.php?sp=vuma](http://esrp.csustan.edu/speciesprofiles/profile.php?sp=vuma)
- Brown, N. L., & Williams, D. F. (n.d.). *Fresno kangaroo rat*. Endangered Species Recovery Program. Retrieved October 23, 2020, from [esrp.csustan.edu/speciesprofiles/profile.php?sp=dinie](http://esrp.csustan.edu/speciesprofiles/profile.php?sp=dinie)

- Burrowing Owl Conservation Network. (2013, November 1). *Burrowing Owl Facts*. [burrowingowlconservation.org/burrowing\\_owl\\_facts/](http://burrowingowlconservation.org/burrowing_owl_facts/)
- Center for Biological Diversity. (2009, March 4). *Saving the San Joaquin Kit Fox*. [www.biologicaldiversity.org/species/mammals/San\\_Joaquin\\_kit\\_fox/index.html](http://www.biologicaldiversity.org/species/mammals/San_Joaquin_kit_fox/index.html)
- Gerrard, R., Stine, P., Church, R., & Gilpin, M. (2001). Habitat evaluation using GIS: A case study applied to the San Joaquin Kit Fox. *Landscape and Urban Planning*, 52(4), 239–255. doi.org/10.1016/S0169-2046(00)00119-5
- Kern River Preserve. (2020, October 2). *Climate of the Kern River Valley*. Audubon California Kern River Preserve. [www.kern.audubon.org/climate.htm](http://www.kern.audubon.org/climate.htm)
- Maranzani, B. (2018, July 17). Why Mexico Won the Alamo but Lost the Mexican-American War. *History A&E Television Networks*. [www.history.com/news/why-mexico-won-the-alamo-but-lost-the-mexican-american-war](http://www.history.com/news/why-mexico-won-the-alamo-but-lost-the-mexican-american-war)
- O'Farrell, T. P. (1983). *San Joaquin kit fox recovery plan*. U.S. Fish and Wildlife Service.
- Paine, R. T. (1969). A note on trophic complexity and community stability. *The American Naturalist*, 103(929), 91–93. doi.org/10.1086/282586
- Palmer, J. (2016, September 27). The creatures that can survive without water for years. *BBC Earth*. [www.bbc.com/earth/story/20160926-the-creatures-that-can-survive-without-water-for-years](http://www.bbc.com/earth/story/20160926-the-creatures-that-can-survive-without-water-for-years)
- Tejon Indian Tribe. (2017, November 26). *Our History*. [www.tejonindiantribe.com/our-history](http://www.tejonindiantribe.com/our-history)
- Tejon Ranch. (2015, May 5). *History – Tejon Ranch*. [tejonranch.com/the-company/corporate-values/history](http://tejonranch.com/the-company/corporate-values/history)
- Tejon Ranch. (2020). *Thoughtful Planning*. Grapevine at Tejon Ranch. Retrieved November 6, 2020, from [www.grapevineattejonranch.com/thoughtful-planning/](http://www.grapevineattejonranch.com/thoughtful-planning/)
- Tejon Ranch Conservancy. (2019, November 30). *Science*. [www.tejonconservancy.org/science](http://www.tejonconservancy.org/science)

## Forced Sterilizations in ICE: How the Legacy of Eugenics Still Continues Today



REBECCA BIHN-WALLACE

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*WRITER'S COMMENT: I chose to write about forced sterilizations at an ICE detention center in Irwin County, Georgia, due to my interest in women's rights and in immigration policies—both of which were relevant to the UWP 104J: Writing for Social Justice class I took in Fall Quarter 2020. I became interested in how the medical malpractice at the center fit into larger patterns of state control over reproductive rights and the legacy of eugenics in the United States, a legacy which features prominently—though not exclusively—in the American South. The dichotomy between state opposition to birth control and the implicit acceptance of sterilizations performed on immigrant women at the detention center in Georgia proved to be a rewarding, if disturbing, framework for the paper. The use of immigrant women's bodies for monetary gain spoke of an almost casually malicious view of detainees as less than human and undeserving of exercising personal choice. My findings revealed that obstacles to reproductive care kept pace with the reprehensible actions undertaken by the doctors and nurses at the detention center. Why should this be so? Is there one rule for U.S. citizens and another for detained immigrants? What does institutional opposition to reproductive care for citizens have to do with forced reproductive measures for immigrants? It is my hope that my paper illuminates this hypocrisy and urges readers to action.*

*INSTRUCTOR'S COMMENT: Throughout our time working together on writing, Rebecca demonstrated a keen understanding of the context in which she was writing and how to navigate external constraints. I recall a conversation we had over Zoom about how sources were scarce*

*and how she thought through the challenge posed by that lack and created a piece that contextualizes the forced sterilization of women not only historically but also in current events. The final piece is confident and thoughtful, but what is less apparent to readers is how Rebecca challenged herself by putting herself in the text. She reckons with her own positionality instead of remaining safely behind the objectivity that reports are taught to seek. I see Rebecca combining the strengths of traditional reporting and new journalism in this text, which allows her to advocate for social justice while demonstrating her excellent skills in research and synthesis.*

—Erika Strandjord, University Writing Program

## Part I: What Really Happened

In January 2019, an undocumented immigrant named Wendy Dowe was awakened by guards at an immigration detention center in Irwin County, Georgia. She was told she would be having surgery due to concerns she raised earlier about menstrual cramping and potential ovarian cysts. Dr. Mahendra Amin, an outside medical provider, compelled a shackled and handcuffed Dowe to have the cysts surgically removed at her appointment.<sup>1</sup> But upon her deportation to Jamaica, her country of origin, Dowe consulted with doctors and learned that the cysts were naturally occurring and hadn't required any invasive surgery. Moreover, Dowe wasn't the only detained woman who received an unnecessary gynecological operation at the hands of Amin. What follows is a harrowing account of medical malpractice and forced sterilization enabled by employees at the immigration detention center in Irwin County and conducted by Amin, whose lawyer has vigorously denied all of the allegations. These events speak not only to the depravity of the United States' handling of the current immigration crisis—exacerbated by the draconian policies of former President Donald Trump—but to an insidious legacy of sterilization as social control that still has repercussions today. Interestingly, sterilization tactics, often promoted as being for the “greater good” of society, run parallel to state opposition of reproductive

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<sup>1</sup> Caitlin Dickerson, et al., “Immigrants Say They Were Pressured Into Unneeded Surgeries.” *The New York Times*, 29 Sept. 2020, [www.nytimes.com/2020/09/29/us/ice-hysterectomies-surgeries-georgia.html](http://www.nytimes.com/2020/09/29/us/ice-hysterectomies-surgeries-georgia.html)

rights. While never publicly linked, each issue demonstrates lawmakers' attempts to use the body as a means of social control.

Sterilization once operated under the guise of positive social change and, though outlawed in Georgia fifty years ago,<sup>2</sup> is now conducted amid reassurances of patient consent by doctors like Amin. The link between these sterilizations and the current bitter fight against female reproductive rights may at first seem counterintuitive: the ICE sterilizations argued for the elimination of sexual apparatus on flimsy medical grounds, while those who are against reproductive care expansion for legal residents advocate for limited access to birth control. But these are actually two sides of the same coin: each behavior endorses the concept of the female body—particularly the Black or Brown female body—as a receptacle for prevailing ideas that implicitly violate human rights, and each weaponizes that same body to further social and political aims. The danger in this way of thinking is that it codifies reproductive measures as practically mandatory for one group of people (undocumented immigrants) and negligible for another (legal residents).

It also implies that an immigrant woman's potential offspring are less desirable and that doctors have the right to surgically intervene based on her lack of residential status while the state looks the other way. While women in ICE detention centers have struggled to access abortions, they have simultaneously been pressured into sterilizations. The contradictory nature of these policies demonstrates institutional anxieties about immigrant women's ability to reproduce. Instead of wading into the moral quagmire of abortion, the Irwin County detention center removed some women's ability to have children altogether. By contrast, women who are legal residents have faced statewide attempts to limit birth control<sup>3</sup>, demonstrating a cultural imperative for them to produce children—sometimes against their will. In both cases, a woman's choice is imposed by external forces rather than adhering to its true definition: choice as an expression of private and personal agency.

In 2018, a lawyer had raised concerns about the outside referrals to Amin's office, but the detained women continued to be sent there. And they continued to express concern about the proliferation of invasive surgeries, including hysterectomies, in Amin's care. In a whistleblower

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<sup>2</sup> Elizabeth Hargrett, "Eugenics in Georgia." *New Georgia Encyclopedia*, 16 Aug. 2019, [www.georgiaencyclopedia.org/articles/government-politics/eugenics-georgia](http://www.georgiaencyclopedia.org/articles/government-politics/eugenics-georgia)

<sup>3</sup> "Birth Control." *NARAL Pro-Choice Georgia*, 16 Feb. 2018, [prochoicageorgia.org/issue/birth-control/](http://prochoicageorgia.org/issue/birth-control/)

report filed by ICE nurse Dawn Wooten in September 2020 with the nonprofit Project South, Wooten said that the nurses at the detention center were often unable to adequately express themselves in Spanish—the language spoken by many of the residents detained there—which prevented the residents from sharing concerns or asking questions about their upcoming procedures. Due to this language barrier, many were unsure about why they needed surgeries. According to Wooten, Amin was referred to as the “uterus collector” and was known for “taking [everybody’s] stuff out.”<sup>4</sup> Women individually interviewed at the detention center painted a similar picture. One said she knew five other detainees who were sent to Amin for hysterectomies between October and December 2019 alone.<sup>5</sup> Another woman allegedly had the wrong ovary removed. Still another was informed by doctors that she had ovarian cysts and needed to have her womb taken out. A doctor promised her a twenty-minute procedure to drain the cysts, while a nurse informed her that she had “heavy bleeding” and a “thick womb”—incongruent with the patient’s medical history—necessitating a hysterectomy. The nurse became angry when the patient objected. At least fifty-seven detainees recalled being pressured into surgeries they neither wanted nor needed.<sup>6</sup> Officials used conflicting explanations to obfuscate their reasons for the surgeries.

Five gynecologists reviewing the sixteen cases examined in the *New York Times*’ bombshell article about the report noted that, based on the medical records handled by the *Times*, some of which were incomplete and unclear, it was unusual for a doctor to consistently recommend hysterectomies.<sup>7</sup> Moreover, the *Times* brought Amin’s potential motives to light: outside doctors providing care to detained immigrants are generously compensated by the Department of Homeland Security, particularly when it comes to surgeries. The Justice Department had previously investigated Amin regarding these kinds of payouts in 2013.<sup>8</sup>

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4 Project South, “Lack of Medical Care, Unsafe Work Practices, and Absence of Adequate Protection Against COVID-19 for Detained Immigrants and Employees Alike at the Irwin County Detention Center.” *Project South*, 14 Sept. 2020, 19, [projectsouth.org/wp-content/uploads/2020/09/OIG-ICDC-Complaint-1.pdf](https://projectsouth.org/wp-content/uploads/2020/09/OIG-ICDC-Complaint-1.pdf)

5 *Ibid.*, 18.

6 Dakota Hall, “ICE Sterilizations in Georgia Evoke Tragic Chapters in South’s History.” *Facing South*, Institute for Southern Studies, 19 Nov. 2020, [www.facingsouth.org/2020/11/ice-sterilizations-georgia-evoke-tragic-chapters-souths-history](https://www.facingsouth.org/2020/11/ice-sterilizations-georgia-evoke-tragic-chapters-souths-history)

7 Dickerson, et al., “Immigrants Say They Were Pressured Into Unneeded Surgeries.”

8 “Hospital Authority of Irwin County Resolves False Claims Act Investigation for

Amin and other defendants in the civil suit agreed to pay a hefty fine in order to “resolve allegations” about false claims to Medicare and Medicaid. None were deemed liable for their actions.

## **Part II: A Legacy of State-Sanctioned Sterilizations**

Later, a 2020 whistleblower report, which prompted House Speaker Nancy Pelosi and others to call for a federal investigation of the center’s medical practices, indicated that Amin had continued to engage in similar behavior.<sup>9</sup> Pelosi’s comment that the situation recalled “the darkest moments of our nation’s history” referred to a legacy of medical malpractice toward and sterilization of the country’s most vulnerable citizens—among them the poor, the mentally or physically disabled, women, and people of color.<sup>10</sup> The events at the Irwin County detention center were an ugly continuation of this troubled history, which dates back to before the Civil War, when gynecologists freely experimented on enslaved women.<sup>11</sup> J. Marion Sims, a South Carolinian surgeon dubbed the “father of modern gynecology,” operated on slave women in the South and Irish immigrant women in the North in the middle of the nineteenth century. In those years, race, ethnicity, gender, and disability became acceptable grounds for medical experimentation. Characteristics veering from the purportedly healthy, intelligent, White norm were viewed as defects that rendered patients less than human.

This convoluted rationalization of ethics violations was informed by post-Darwinian racial theories favoring “selective breeding”—the propagation of certain heritable traits over others. “Criminality, disease, poverty, and mental illness” became increasingly associated with “poor heredity,” or bad genes. Scientists, doctors, and activists across the

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\$520,000.” *The United States Department of Justice*, U.S. Attorney’s Office, Middle District of Georgia, 29 Apr. 2015, [www.justice.gov/usao-mdga/pr/hospital-authority-irwin-county-resolves-false-claims-act-investigation-520000](http://www.justice.gov/usao-mdga/pr/hospital-authority-irwin-county-resolves-false-claims-act-investigation-520000)

9 Rachel Treisman, “Whistleblower Alleges ‘Medical Neglect,’ Questionable Hysterectomies Of ICE Detainees.” *NPR*, 16 Sept. 2020, [www.npr.org/2020/09/16/913398383/whistleblower-alleges-medical-neglect-questionable-hysterectomies-of-ice-detaine](http://www.npr.org/2020/09/16/913398383/whistleblower-alleges-medical-neglect-questionable-hysterectomies-of-ice-detaine)

10 *Ibid.*

11 Maia A. Hill, “The Stain of Slavery on the Black Woman’s Body and the Development of Gynecology: Historical Trauma of a Black Woman’s Body.” *The Macksey Journal* 1, Article 86 (13 May 2020), [mackseyjournal.scholasticahq.com/article/21782-the-stain-of-slavery-on-the-black-women-s-body-and-the-development-gynecology-historical-trauma-of-a-black-women-s-body](http://mackseyjournal.scholasticahq.com/article/21782-the-stain-of-slavery-on-the-black-women-s-body-and-the-development-gynecology-historical-trauma-of-a-black-women-s-body)

political spectrum endorsed these ideas.<sup>12</sup> The nineteenth-century categorization of people into social, racial, ethnic, and mental categories soon evolved into an insidious race-based science that held sway well into the latter half of the twentieth century. Thus, the gynecological malpractice enabled by the Irwin County detention center in Georgia is inseparable from the American legacy of the Black or Brown female body as a receptacle for prevailing prejudices. The surgeries became the literal embodiment of this phenomenon. In the Irwin County case, the Black or Brown immigrant body's ability to produce life was treated as expendable, something revocable but for an accident of birth: the women were immigrants rather than legal residents. That evidently necessitated their powerlessness in the eyes of medical professionals and informed the elimination of their reproductive capacities. And historically, sterilization has been used to remove the possibility of producing members of society with undesirable characteristics—according to eugenics logic, that meant the poor and the disabled as well as Black people, Brown people, and immigrants.

The nation's burgeoning eugenics movement at the start of the twentieth century went hand in hand with the increased popularity of sterilization as a force for the greater good—an idea which was particularly, though not exclusively, potent in the Jim Crow South. The Virginia Sterilization Act of 1924 set in motion state initiatives to legalize sterilization. Sterilizations of Black women in the South became so common they were apparently referred to as “Mississippi appendectomies.”<sup>13</sup> In 1937, Georgia legalized eugenics-based sterilization, aiming to prevent diseases and mental and physical disabilities from being passed on to future generations.<sup>14</sup> Along with the less insidious elements of the state's Depression-era “Little Deal”—which included increased access to healthcare, education, and housing—sterilization became institutionalized in Georgia under the guise of positive social reform. The strangeness of historically liberal social policies being enacted alongside state-sanctioned sterilizations is remarkable, but unsurprising: the federal New Deal left many people of color by the wayside, and state governments, establishing social protections of

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12 Hargrett, “Eugenics in Georgia.”

13 Hall, “ICE Sterilizations in Georgia Evoke Tragic Chapters in South's History.”

14 Hargrett, “Eugenics in Georgia.”

their own, evidently followed suit.<sup>15</sup> Throughout the 1940s and 50s, sterilization rates in Georgia soared. An unflattering exposé in an Atlanta newspaper brought the practices to a gradual halt in the early 1960s, but the law wasn't actually outlawed until 1970.<sup>16</sup>

The damage was done, though: the body—in particular the Black or Brown female body—became an ideal setting for contentious moral debates, a place where politicians and doctors could tinker for their political and monetary gain. The outlawing of sterilizations, as well as advances in female reproductive rights legislation, created a corresponding panic among lawmakers who had lost their primary means of social control. Though these conflicts seem like uneasy opposites, they represent an identical goal: the use of the body as the most primitive weapon with which to maintain outdated social standards. In both, the question of a woman's choice was bitterly contested. A woman's ability or decision to carry a child was mutable, something she could manage at her own behest, which necessarily meant that the state lacked reproductive control of its citizens. It's no mistake, then, that reproductive rights soon became deeply contentious. With the implementation of *Roe v. Wade*, the landmark Supreme Court case that legalized abortion nationwide in 1973, access to safe and legal abortions increased and a correspondingly vocal anti-abortion movement blossomed.<sup>17</sup>

### **Part III: Where We Are Now**

With this in mind, it's unsurprising that the most recent efforts to limit access to abortion have occurred in the South. In July 2019, Georgia Gov. Brian Kemp signed a bill making it a crime for a woman to have an abortion past six weeks of pregnancy. Kemp's bill made access to the procedure virtually impossible, since Georgia women are already required to have at least two doctor's appointments before having an abortion. State health insurance only covers abortion if the mother's life is in danger or if her health is severely compromised, and minors cannot undergo abortions without parental consent, implementing both financial and age barriers to the procedures. Kemp's bill added insult to injury, heaping

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<sup>15</sup> Ta-Nehisi Coates, "The Case for Reparations." *The Atlantic*, June 2014, [www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631](http://www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631)

<sup>16</sup> Hargrett, "Eugenics in Georgia."

<sup>17</sup> "Roe v. Wade: The Constitutional Right to Access Safe, Legal Abortion." *Planned Parenthood Action Fund*, Planned Parenthood, [www.plannedparenthoodaction.org/issues/abortion/roe-v-wade](http://www.plannedparenthoodaction.org/issues/abortion/roe-v-wade)

severe time constraints onto the logistical obstacles to the procedure already in place.<sup>18</sup> As in earlier justifications of sterilizations during the twentieth century, these measures were purportedly undertaken in the interest of the greater good even though they were unconstitutional, an obstacle preventing the *life, liberty, and pursuit of happiness* outlined in the United States Constitution. In August 2020, Kemp's bill was struck down.<sup>19</sup> And though similar bans have been struck down in North Carolina, Mississippi, Arkansas, Arizona, Iowa, and North Dakota, Gov. Kemp's actions indicated the state's extreme aversion to the question of bodily agency: the choice to keep or terminate a pregnancy. That these regional efforts have unfolded alongside revelations about the Irwin County detention facility in Georgia reflects the contradictory nature of access to reproductive care.

While legal residents have faced barriers to this kind of care, immigrant women have had it forced upon them, as have incarcerated individuals. Between 2010 and 2015, at least four plea deals made in Nashville, Tennessee involved sterilization.<sup>20</sup> In 2017, a Tennessee judge in White County signed an order eliminating thirty days of jail time for any inmate who agreed to a vasectomy or a birth control implant.<sup>21</sup> The judge candidly portrayed this measure as beneficial to all, justifying it by saying that fewer children would be born to parents with chronic drug use issues and legal troubles. Such thinking isn't particularly far from the logic that informed frequent sterilizations in the South during the last century. Once again, the argument of sterilization or government-mandated birth control as a force for the greater good was employed, implicitly furthering eugenics-based thinking and maintaining that criminality was as good a reason as any to prevent someone from reproducing. It also incorrectly implied that criminal behavior was somehow congenital. Though the judge's decision was later abolished in 2019, people's right to choose when and why they reproduce is still viewed as a danger to

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18 Ibid.

19 "Georgia Appeals Ruling That Blocked Restrictive Abortion Law." *90.1 FM WABE*, Associated Press, 12 Aug. 2020, [www.wabe.org/georgia-appeals-ruling-that-blocked-restrictive-abortion-law](http://www.wabe.org/georgia-appeals-ruling-that-blocked-restrictive-abortion-law)

20 Sheila Burke, "Attorneys: Sterilizations Were Part of Plea Deal Talks." *AP NEWS*, Associated Press, 28 Mar. 2015, [apnews.com/article/824ffb7d2ed84849b5d87c41cdf8c0f7](http://apnews.com/article/824ffb7d2ed84849b5d87c41cdf8c0f7)

21 "A Vasectomy Means Reduced Jail Time For Inmates." *News Channel 5*, 21 July 2017. [www.newschannel5.com/news/inmates-given-reduced-jail-time-if-they-get-a-vasectomy](http://www.newschannel5.com/news/inmates-given-reduced-jail-time-if-they-get-a-vasectomy)

the oft-mythologized public good. Personal agency and freedom from governmental interference are touted so long as they maintain a racial and sex-based status quo. When people's needs or wishes conflict with that delicate maintenance of power, atrocious human rights violations have occurred under the guise of medical necessity, particularly under the purview of state governments.

Ultimately, the events at the Irwin County detention center are perhaps the ugliest culmination of immigrant and reproductive rights battles occurring in the United States right now. The detention center's actions were bolstered by a legacy of eugenics-based lawmaking in the state of Georgia and beyond. These historical precedents rendered such behavior permissible because the immigrant women were implicitly viewed as "less than." Doctors and nurses seemed to think they were eliminating a problem, performing a task by the books. Masquerading as a legitimate health and safety measure, the events in Irwin County are a haunting reflection of long-held institutionalized racism and cruelty toward immigrant women and women of color. Disappointingly, dwindling news coverage of this phenomenon has caused it to fade from the public eye. While it's perhaps due to a lack of substantive state or federal action regarding the conditions outlined in the whistleblower report, minimal press coverage may pose the greatest threat to public awareness about the detention center. Though the issue may feel entirely out of our hands, sustained action is needed to enact change: those who can vote also can pressure the federal government into investigating the issue further. Lacking public attention, the problem will all too conveniently disappear in the eyes of state lawmakers. Consider, for a moment, the story of Yuridia, an undocumented immigrant who was subjected to dilation, curettage, and laparoscopic surgery that she did not ask for. "I woke up and I was alone, and I was in pain and everyone spoke English so I could not ask any questions," Yuridia said.<sup>22</sup> Nevertheless, she was deported to Mexico three days later.

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22 Dickerson, et al., "Immigrants Say They Were Pressured Into Unneeded Surgeries."

## **Bibliography**

- “Birth Control.” *NARAL Pro-Choice Georgia*, 16 Feb. 2018, [prochoicageorgia.org/issue/birth-control/](http://prochoicageorgia.org/issue/birth-control/)
- Burke, Sheila. “Attorneys: Sterilizations Were Part of Plea Deal Talks.” *AP NEWS*, *Associated Press*, 28 Mar. 2015, [apnews.com/article/824ffb7d2ed84849b5d87c41cdf8c0f7](http://apnews.com/article/824ffb7d2ed84849b5d87c41cdf8c0f7)
- Coates, Ta-Nehisi. “The Case for Reparations.” *The Atlantic*, June 2014, [www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631/](http://www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631/)
- Dickerson, Caitlin, et al. “Immigrants Say They Were Pressured Into Unneeded Surgeries.” *The New York Times*, 29 Sept. 2020, [www.nytime.com/2020/09/29/us/ice-hysterectomies-surgeries-georgia.html](http://www.nytime.com/2020/09/29/us/ice-hysterectomies-surgeries-georgia.html)
- “Georgia Appeals Ruling That Blocked Restrictive Abortion Law.” *90.1 FM WABE*, *Associated Press*, 12 Aug. 2020, [www.wabe.org/georgia-appeals-ruling-that-blocked-restrictive-abortion-law/](http://www.wabe.org/georgia-appeals-ruling-that-blocked-restrictive-abortion-law/)
- Hall, Dakota. “ICE Sterilizations in Georgia Evoke Tragic Chapters in South’s History.” *Facing South*, Institute for Southern Studies, 19 Nov. 2020, [ww.facingsouth.org/2020/11/ice-sterilizations-georgia-evoke-tragic-chapters-souths-history](http://ww.facingsouth.org/2020/11/ice-sterilizations-georgia-evoke-tragic-chapters-souths-history)
- Hargrett, Elizabeth. “Eugenics in Georgia.” *New Georgia Encyclopedia*, 16 Aug. 2019, [www.georgiaencyclopedia.org/articles/government-politics/eugenics-georgia](http://www.georgiaencyclopedia.org/articles/government-politics/eugenics-georgia)
- Hill, Maia A. “The Stain of Slavery on the Black Woman’s Body and the Development of Gynecology: Historical Trauma of a Black Woman’s Body.” *The Macksey Journal*, vol. 1, Article 86, 2020, [mackseyjournal.scholasticahq.com/article/21782-the-stain-of-slavery-on-the-black-women-s-body-and-the-development-gynecology-historical-trauma-of-a-black-women-s-body](http://mackseyjournal.scholasticahq.com/article/21782-the-stain-of-slavery-on-the-black-women-s-body-and-the-development-gynecology-historical-trauma-of-a-black-women-s-body)
- “Hospital Authority of Irwin County Resolves False Claims Act Investigation for \$520,000.” *The United States Department of Justice*, U.S. Attorney’s Office, Middle District of Georgia, 29 Apr. 2015, [www.justice.gov/usao-mdga/pr/hospital-authority-irwin-county-resolves-false-claims-act-investigation-520000](http://www.justice.gov/usao-mdga/pr/hospital-authority-irwin-county-resolves-false-claims-act-investigation-520000)

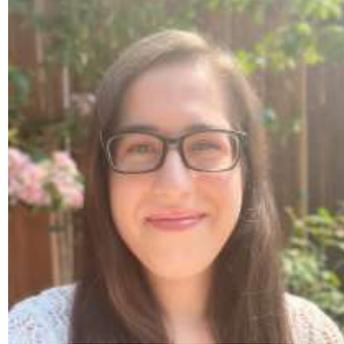
Project South. “Lack of Medical Care, Unsafe Work Practices, and Absence of Adequate Protection Against COVID-19 for Detained Immigrants and Employees Alike at the Irwin County Detention Center.” *Project South*, 14 Sept. 2020, [projectsouth.org/wp-content/uploads/2020/09/OIG-ICDC-Complaint-1.pdf](https://projectsouth.org/wp-content/uploads/2020/09/OIG-ICDC-Complaint-1.pdf)

“Roe v. Wade: The Constitutional Right to Access Safe, Legal Abortion.” *Planned Parenthood Action Fund*, Planned Parenthood, 2021, [www.plannedparenthoodaction.org/issues/abortion/roe-v-wade](http://www.plannedparenthoodaction.org/issues/abortion/roe-v-wade)

Treisman, Rachel. “Whistleblower Alleges ‘Medical Neglect,’ Questionable Hysterectomies Of ICE Detainees.” *NPR*, 16 Sept. 2020, [www.npr.org/2020/09/16/913398383/whistleblower-alleges-medical-neglect-questionable-hysterectomies-of-ice-detaine](http://www.npr.org/2020/09/16/913398383/whistleblower-alleges-medical-neglect-questionable-hysterectomies-of-ice-detaine)

“A Vasectomy Means Reduced Jail Time For Inmates.” *News Channel 5*, 21 July 2017, [www.newschannel5.com/news/inmates-given-reduced-jail-time-if-they-get-a-vasectomy](http://www.newschannel5.com/news/inmates-given-reduced-jail-time-if-they-get-a-vasectomy)

# The Forgotten War Story of French Women: Analysis of First World War Literature and First- Hand Accounts



MARIANA VALDEZ JIMENEZ

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*WRITER'S COMMENT: In the Spring Quarter of 2021, I took a fascinating history seminar on the participants in major Western wars starting with World War I and onto the present day. Most of the reading and discussion focused on the soldiers' experiences, and what interested me the most was their relationships with the civilian lives they had left behind. All of the novels we read were written by men, most of which contained varied levels of disdain towards civilians, women in particular. Misogyny was normalized in these texts and any female presence was almost exclusively negative. None of this was of any surprise to me, as sexism in literature is already so infamously common, but it did inspire me to search for more accurate accounts of the roles women played in Western wars. Focusing specifically on French women in World War I, I discovered that the portrayal of the passive or judgmental woman reflected in much of her time's literature hid the oppressive and patriarchal reality, a reality I hope to make more common knowledge.*

*INSTRUCTOR'S COMMENT: I first met Ms. Valdez Jimenez in Fall 2020, when she enrolled in my HIS 141: Modern France lecture course. I immediately found her to be a fluid and highly compelling writer, one of the best among the undergraduates I have been fortunate enough to teach. She then enrolled in HIS 102E, a seminar in European history, in Spring 2021. The essay below is her final paper for the class: it is crisply written, well-sourced, and overall, a model undergraduate essay. Ms. Valdez Jimenez reads soldiers' memoirs from the First World War*

*against the grain to argue that while women could play an important role in them, they did so mainly as symbols and objects against which men defined a fragile sense of misogynistic trench masculinity.*

—Adam Zientek, *Department of History*

In 1871, France lost the Franco-Prussian War after German Chancellor Otto von Bismarck engineered a dispute over Spanish succession to unify and fortify Germany. The conflict was quick and decisive—with the French suffering roughly 140,000 fatalities to Germany’s 44,000—and was an enormous embarrassment to the state. The glorious, unbeatable French army of the Napoleonic Age and before was no more. Beyond the physical losses, the humiliation was emasculating, threatening the integrity of the gendered society that championed masculinity as a driving force behind France’s strength. The First World War would be a rematch against Germany, a chance for the French Army to reassert its dominance and regain its former glory. But the easy victory people assumed did not come, and instead, Europe spent five years dug into trenches and slowly wearing away at each other in what would be the bloodiest European conflict until World War II. The favorite story of the First World War is this: the infamous trench warfare that was miserable, gory, and hopeless. Many popular novels of this war, regardless of national origin, center around young soldiers who might differ in their reasons for fighting but are in near-complete agreement of the hardships and trauma they faced. But to focus exclusively on this story erases an entire perspective: that of women. World War I novels written by and about men described the women they encountered, most often French women, as ignorant, stupid, sexually provocative, and useless. Limited by misogyny and misconstrued ideas of gender, these novels fail to depict the reality of French women fighting a war of their own.

The nature of warfare and new style of fighting separated men from ordinary society in not just a physical way but a psychological one. Although sexism and misogyny obviously predate World War I, the new reality formed in the trenches allowed soldiers’ negative conceptions of women to develop further. In previous European wars, soldiers could expect battles to last a few days at most, with long breaks from direct conflict in between. Now, armies from both sides kept their men at the front for months, if not years, at a time, where danger was constant and random. Historians Stéphane Audoin-Rouzeau and Annette Baker

claim that it “is now known that soldiers on a battlefield can hope to preserve their psychological equilibrium for only several months at best,” but World War I soldiers who stayed in a battlefield constantly despite injuries and exhaustion could not hope for this.<sup>1</sup> The constant stress was so jarring and overwhelming that a common way to cope was the desensitization and normalizing of their new lives. There was no mental or emotional room for anything other than what the soldier was experiencing in that moment. Jean Dartemont, the main character in Gabriel Chevallier’s novel *Fear*, summarized it as, “I have a single idea: get through the bullets, the grenades, the shells, get through them all . . . to be alive is to be victorious.”<sup>2</sup> His entire worldview was condensed down to the activity his senses could perceive. Any greater political reasons for war or the civilians the soldiers were supposed to be fighting to protect were no longer real. In the novel of a British soldier based on his experiences, *Her Privates We*, Frederic Manning added on to this notion by writing that “in the actual agony of battle . . . women cease to exist so completely that they are not even irrelevant.” In these mentally scarring moments of trauma, the very concept of women was removed from the soldiers’ reality. They certainly thought of women often during calmer times of the day, but the distance from civilian life was so great that they were now viewed in the abstract, rather than as real figures, because they did not fit within a soldier’s war life.

The civilian life was replaced by stress, violence, and trauma. Dartemont encountered so much gore and horror on a daily basis that it became incorporated into his new worldview. If he had seen any of this “outside the war,” he “would surely have fainted away in shock.”<sup>3</sup> But in the universe of the trenches, only a few hours away from French civilians, this was normal. In *Her Privates We*, main character Private Bourne observed that although there was “nothing in war which is not in human nature,” the extreme violence men imposed on each other was “blind,” “irrational,” and uncontrollable. Despite this description of chaos, Manning’s character gloomily concluded with “c’est la guerre,” an

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1 Stéphane Audoin-Rouzeau and Annette Baker, “Battle, Combat, Violence: A Necessary History.” In *14–18: Understanding the Great War*. trans. by Catherine Temerson (New York: Hill and Wang, 2002), pp. 15–44, 25.

2 Gabriel Chevallier, *Fear: A Novel of World War I*, trans. Malcolm Imrie (New York Review of Books, 2011), 70.

3 Gabriel Chevallier, *Fear*, trans. Malcolm Imrie (New York Review of Books, 2011), 81.

acceptance of it all, despite its horror.<sup>4</sup> Although uncontrollable, war was inevitable. To resist it would be to challenge a soldier's very nature.

The indoctrination into war life went beyond enemy aggression and casualties. Through their main characters, both Chevallier and Manning included ample descriptions of the monotony and hard manual labor that took up much of the men's daily lives. The nature of the World War I battlefield required soldiers to dig, fortify, and maintain their trenches if they hoped to survive. These open-air tunnels of mud, rot, and human waste were not just their hideouts—they were the soldiers' home. This was true for the German army as well. In his memoir *Storm of Steel*, decorated lieutenant Ernst Junger described daily life in the beginning of the war as physically "taxing" and frustratingly pointless, with even reserve times "not much cosier" than the front lines.<sup>5</sup> In these first several weeks, Junger was new to the war and had yet to see much combat, thus he was not integrated into war life. But as the months dragged on to years, soldiers who had spent their whole lives within the same several miles evolved the "rudimentary holes in the ground" to properly advanced dugouts "with beamed ceilings and plank-cladded walls" Junger could almost relax in "with a feeling of cosy seclusion."<sup>6</sup> Of course, this level of comfort was practically nonexistent in the French and British trenches. The Germans, who were already occupying French and Belgian lands, did not need to advance as often as their opponents, whose main goal was to push the enemy out. They designed their trenches for long-term, defensive use, and therefore had the time to improve upon their surroundings. Nevertheless, the difference of quality of life did not prevent soldiers on both sides to develop attachments to their trenches, the only homes they had, and now, the only homes that mattered.

The psychological separation from the soldiers' world before the war was not just an accidental byproduct of warfare. Governments and military officials often directly intervened to promote this development. When French women petitioned their government to be allowed into war zones to visit their husbands at the rear, the military police not only forbade it but spent time and resources investigating women they suspected might sneak in anyway. And yet, the police allowed prostitutes

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<sup>4</sup> Frederic Manning, *Her Privates We* (Endeavor Media, 2018), 116.

<sup>5</sup> Ernst Junger, *Storm of Steel*, trans. Michael Hoffmann (Penguin Books, 2004), 17.

<sup>6</sup> *Ibid.*, 36, 42.

through regularly.<sup>7</sup> The soldiers' contact with French women at the front was usually sexual and devoid of meaningful personal connection. This was, according to novelist Michel Corday, "[to] keep the army in complete isolation, thus protecting it against sentimental weakness."<sup>8</sup> The strength of the army was in its inherent masculinity, and any threats to that, including feminine influence, could jeopardize French victory. The horrors of war and systemic misogyny of governmental rule worked in tandem to promote the distancing and dehumanization of women.

Any honoring or glorifying depiction of femininity was almost always conceptually removed from mortal French women and centered around men's issues. French soldiers prayed to the Virgin Mary, mother of Christ, and worshipped other female heroines like Joan of Arc.<sup>9</sup> But these glorious icons were not regarded as actual, physical women. Rather, as historian Margaret H. Darrow assessed, they were "female in the way that Virtue, Liberty, and the Republic [were] female"<sup>10</sup>—feminine only to romantically portray these values as pure and beautiful. The Virgin Mary and Joan of Arc were not women but spiritual champions of French glory and, by extension, champions of individual men. Any real woman who was recognized as a World War I heroine resembled these abstract icons as much as possible. They were described as simple, nurturing, and endlessly self-sacrificing for the good of men. After all, Darrow wrote, "it was not a heroine's role to play a soldier's part."<sup>11</sup> The romanticized and rare French heroine fit into the soldier's war life only because she lived to serve him and existed in no other sense.

The real French woman was replaced by a vague and oversimplified caricature that represented the opposite of masculinity, and thus by nature stood opposed to the soldier's success. She was ignorant, stupid, privileged, and often obsessed with sex. When soldiers finally did interact with French women during the war, the caricature they had formed in their minds crashed with civilian reality. The encounters described in World War I novels are therefore unreliable and often inaccurate,

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7 Margaret H. Darrow, *French Women and the First World War: War Stories of the Home Front* (Oxford, United Kingdom: Berg Publishers, 2000), 105.

8 *Ibid.*, 105.

9 Stéphane Audoin-Rouzeau and Annette Baker, "Civilization, Barbarism, and War Fervour," in *14–18 Understanding the Great War*, trans. Catherine Temerson (New York, NY: Hill and Wang, 2002), pp. 113–158, 131.

10 Darrow, *French Women and the First World War*, 24.

11 *Ibid.*, 111.

as the authors' sexist biases exacerbated during their own times in the war heavily skewed their interpretations of the French woman's life and behavior.

Part of anti-woman bias came from resentment soldiers harbored toward civilians who had been spared the horrors of war. In Chevallier's *Fear*, Jean Dartemont was seriously injured and sent to a military hospital to recover, which was largely run by female nurses. The abrupt transition from intense firefight to peace and recovery forced Dartemont and his fellow wounded soldiers to directly confront the privileges the war denied them. A common response was to vilify and condemn the nurses, many of which were of higher social classes. Dartemont asserted that nurses only cared for them as a "patriotic task" but secretly looked down on the men with scorn.<sup>12</sup> Beyond his resentment of their relatively soft lives, his perspective was affected by his insecurity over his social class, which had not mattered at the front. He analyzed and critiqued any act of kindness from nurses. Through his rationale, nothing any of them did was truly genuine, so they were irredeemable. Dartemont was not alone in his derision. One of his friends, Sergeant Nègre, would jokingly adopt an alter ego of the Baron de Pocolotte, an exaggerated military official through which Nègre could "express himself without inhibition, knowing that his words of wisdom [would] not be heard by stupid civilians, people for whom he feels the deepest contempt."<sup>13</sup> His bitterness was so intense it turned to active hate, and women, who supposedly glorified the war that had so injured him, were "just wombs" and nothing else.<sup>14</sup> The soldiers' envy of civilian life exaggerated their perceptions of women to be ignorant and disrespectful of their trauma. Their contempt justified any sexism exacerbated in the trenches and only used these interactions as more evidence to support such prejudice.

Authors of World War I novels often projected their own perceptions of sex and masculinity onto their female characters, who they would make sexually provocative and immoral. In Chevallier's *Fear*, sexuality was often directly tied to a soldier's masculinity, the characteristic he relied on most to give him strength in the war. Soldiers injured in war were emasculated, and for nurses to see them in that state only amplified their shame and thus their continued resentment toward the women that

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<sup>12</sup> Chevallier, *Fear*, 103.

<sup>13</sup> *Ibid.*, 92.

<sup>14</sup> *Ibid.*, 113.

cared for them. When Dartemont encountered a soldier who lost his testicles in a war injury, he claimed to notice the nurses infantilize and mock him. They no longer had the “discrete air of submission and fear” women had toward men, a submission which was obviously motivated by the obsession with sex all women had.<sup>15</sup> Dartemont, who was injured himself and had spent months in mortal danger, lacked the control over women he was used to having. His assessment of women as submissive creatures who craved men was his reassurance that no matter how emasculated he might feel, his identity as a man still gave him natural power.

Beyond resentment was the general misogyny so prevalent among European men. Both authors and the characters they expressed themselves through interpreted any interactions with women with the assumption that men were intellectually superior in all cases. In *Fear*, when Dartemont was not directly arguing with them over the realities of warfare, he apparently “led the nurses into traps of logic and ensnare[d] them in syllogisms.”<sup>16</sup> Tragically, dogma and centuries of domesticity prevented them from conversing at his level. While this specific scene is fictional, it suggests Chevallier’s own opinions of women as mentally inferior to men. Through Dartemont’s eyes, their perspectives and arguments were likely limited and misrepresented as foolish and unfounded. Frederic Manning also revealed his prejudice through Private Bourne in his own novel. When Bourne and his companions were temporarily at the mercy of three French women who suspected the men of being deserters, he described himself as a charming and pacifying manipulator who easily talked them down. “Women,” he claimed, “are notoriously influenced by a man’s facial expression . . . they have, in reality, about as much intuition as an egg.”<sup>17</sup> Although the women opted to not report the men to the police, they did not fully acquiesce and kept their leverage over the soldiers. But Bourne, incapable of comprehending a situation in which a woman might hold power over him, rationalized the whole interaction as the men “humouring” the women and reduced them to lucky simpletons. *Her Privates We* joined the many World War I novels to rework characters’ mindsets and capabilities in order to erase any evidence of women successfully challenging gender norms.

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15 Ibid., 97–98.

16 Ibid., 111.

17 Manning, *Her Privates We*, 146.

Sometimes the misrepresentation of women and skewing of events came out of complete lack of consideration of a woman's position, as male privilege impaired their accounts. In one occasion, Private Bourne watched as a corporal groped and fondled the breasts of a young French girl who was serving drinks "while she squealed and wriggled to make him more adventurous."<sup>18</sup> The true level of consent of a fictional girl in a novel cannot be determined, but certainly similar scenarios occurred in real life. The girl's protests, which were assumed by the other men to be in cooperation with the corporal, could have been legitimate. Even if they had not been, a poor, young French girl living in a warzone was likely not in a social position to resist a soldier's advancements without repercussions. Men's constant assumptions of feminine interest ignored the uneven power dynamics women and girls had to live within.

This was especially true of confrontations between French women and occupying German soldiers. Ernst Junger described his encounters with civilians as charming and amusing, most specifically because of the girls. When he got lost on the way to guard duty, he sought directions from a small hut, only to find a seventeen-year-old girl hidden alone inside. To Junger, she was "spirited" and refreshing.<sup>19</sup> When he returned to see the girl he dubbed "Jeanne d'Arc," she treated him to supper and he was "made as pleasantly welcome" as he had hoped.<sup>20</sup> While it was very likely accurate that "Jeanne d'Arc" made herself hospitable and friendly, Junger neglected to consider her extreme vulnerability to him and the fear she may have had of retaliation if she acted any other way. She was, after all, young, unarmed, and entirely alone. Weeks later, Junger quartered in the home of a French family who would have had little to no choice in the arrangement. When the "beautiful daughter" attempted to prevent him from entering her family's bedroom, he "took this to be one of her little jokes [and] pushed back," and knocked down the door, only to realize she was "completely naked."<sup>21</sup> His inability to distinguish flirtation from rejection in this instance calls into question all other assumptions he made of women's behaviors and intentions. Like other men of his time, he could not comprehend that women might think differently than what common sexist rhetoric dictated they did.

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18 Ibid., 71.

19 Junger, *Storm of Steel*, 52.

20 Ibid., 53.

21 Ernst Junger, *Storm of Steel*, trans. Michael Hoffmann (Penguin Books, 2004), 81.

Both Junger and Bourne had privilege as men and foreign occupiers, meaning female cooperation, whether personally consensual or not, was usually coerced.

Many of the World War I novels and nonfiction literature written by men were insightful and historically useful accounts of the trench soldiers' stories. But more often than not, their biases prevented them from providing an accurate description of women. French women in the First World War may not have been active combatants, but their roles went beyond the shallow and cosmetic portrayals the novels suggested. They adapted to the new war culture and struggled in navigating the contradicting patriarchal rules that the war only further complicated. Despite its erasure in popular media, the French woman's war story was just as rich and developed.

Women in France actively sought ways to contribute as much to the war effort as they were allowed. Even before the official start of the war, when war panic began to take hold across Europe in the 1910s, women explored different avenues of engagement. They advocated for the canonization of Joan of Arc, government recognition and funding of the French Red Cross, and universal male conscription.<sup>22</sup> They were actually successful in all three of these areas, but none of the new changes significantly incorporated women into the formally recognized war effort. Joan of Arc was a champion for male soldiers, not female fighters, and although many women did participate in the Red Cross after 1914, the role came with anti-feminine criticism of its own. As the anticipation for war increased, so did serious debates among women over how they should best support their men and country. One journalist, Andrée d'Alix, suggested women should prepare to take over men's roles "[in] banks, the civil service, factories, and especially in agriculture," while eccentric socialite Jane Dieulafoy went as far as to call for a military reserve of women.<sup>23</sup> Few took Dieulafoy's ideas seriously, and no opinion went unchallenged. But the overwhelming commonality was the desire to provide in the most appropriate way possible.

The Great War came suddenly, before any consensus could be made. Just as armies rushed to mobilize, so did civilian life completely transform into the home front, and women scrambled to find their new social place. Perhaps the most well-known form of female war service, the

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<sup>22</sup> Darrow, *French Women and the First World War*, 23.

<sup>23</sup> *Ibid.*, 42.

Red Cross and military nursing became a popular volunteering option for women of almost exclusively upper-class status. The work was either unpaid or offered meager wages, so middle- and working-class women could not leave their families and livelihoods to participate for free. “If only I were rich,” workers’ rights activist Louise Delétang lamented, “if only I had the time!”<sup>24</sup> In 1916, the military created the job of Temporary Military Nurse, a paid position, in response to the growing shortage of nurses. But in Delétang’s view and that of her peers, “the program was too late” for working women who had committed to other work elsewhere.<sup>25</sup> Participating at the war front was simply not an option for most French women, thus explaining the roster of high-class socialites described in Chevallier’s *Fear* and other similar novels. Nurses made up only a small and specific demographic of the larger female population, and to shrink the perception of World War I women to only them would be entirely misleading.

Other favorite forms of involvement among rich women were more accessible to the middle and some of the working class. The *marraines de guerre*, “a peculiarly French creation,” was a letter-writing program in which civilians, but mostly women, could “adopt” a soldier at the front so that he may receive feminine comfort.<sup>26</sup> The program encouraged and reinforced the idea that women during wartime should direct their time and devotion to their beloved men in the trenches and that, if they did not have a loved one to long for, they should find one. The *marraines de guerre* were initially praised for their patriotic duty but soon became subjects of ridicule. They were accused of using the program to “collect” soldiers of lower classes than them so they could infantilize and patronize them.<sup>27</sup> Resentment of class and hierarchy was a common theme among lower-ranking soldiers, and many accounts reveal dislike of their own military officers who enjoyed luxury while they suffered. But when class and gender combined, male-written literature and contemporary journalism could intensify to hate. The *marraines de guerre* participated in a system that promoted patriarchy and centered men, but they were discounted in written works as privileged opportunists.

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24 Ibid., 134.

25 Ibid., 140.

26 Ibid., 79.

27 Ibid., 81.

Women who worked in regularly direct contact with soldiers were frequently sexualized or at least accused of being sexually motivated. The trope of the *marraine* falling in love with a stranger through letters appeared in contemporary fiction, and both soldiers and journalists alike assumed nurses, driven by sex, lusted after their patients. But Margaret H. Darrow's research revealed that this "romantic/erotic theme . . . was almost entirely absent" in women's own written accounts.<sup>28</sup> Many tried to protest this false narrative publicly, with one nurse pleading with her audience to please not "believe those cute stories that come out several times a week on the fourth page of the newspaper."<sup>29</sup> Jean Dartemont's self-important assumptions that his nurses were sexually fascinated by him were simply unfounded in reality. Rather than lust after their patients, female nurses commonly reported either disgust or "aesthetic distancing" upon seeing the exposed and injured male body. Multiple accounts compared male bodies to Renaissance paintings and one to a Greek vase, while many others "felt nothing but disgust."<sup>30</sup> Misogynistic soldiers who felt emasculated by their injuries and their temporary physical dependence on the women who healed them might have projected their sexual insecurities onto the women, but these feelings were almost entirely unreciprocated.

The war-zone women of France were not the simple and enticing girls Bourne and Junger encountered in their respective novels. Many of them were peasants who struggled to make a living for what was left of their families, and they existed in a state of complete vulnerability to the nearest army, regardless of its nationality. Those who lived in French-controlled areas became "mouths to feed" and general inconveniences. The priority was the military, so women and children "ceased to represent France" and were "made expendable in order to protect the army."<sup>31</sup> Their new label as hindrances to French victory made them natural enemies of their own country, allowing them no more significant protection than those under German occupation. Civilians were allowed to stay on their lands only if their existence benefitted the army. Women were expected to willingly provide soldiers with food, lodging, and on occasion, sex. To resist would be to label herself a liability when her survival depended

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28 Ibid., 156.

29 Ibid., 156.

30 Louise Weiss, *Mémoires d'une européenne: Tome 1 (1893-1919)* (Paris, 1968), 192.

31 Darrow, *French Women and the First World War*, 103.

on the military's good view of her, so "it is not surprising that relatively few women officially complained of rape."<sup>32</sup> Thus, the various instances of feminine hospitality found in *Her Privates We* and *Storm of Steel* are contextualized as coerced scenarios and not just examples of French women offering natural subservience to men. The vilification of women in German-occupied zones as whores and spies was also not grounded in evidence. Historian Deborah Buffton's archival research revealed most French women "continued their lives as best they could," and any cooperation with Germans was less an anti-French sentiment and more an effort to adapt to their new lives.<sup>33</sup> War-zone women had nearly no autonomy, were at the mercy of military whim, and had no army fighting to protect them. World War I left them with no country and no real choice but to submit to passing soldiers whose written works memorialized them as willing reprieves from battle.

The French woman's world beyond her interaction with soldiers was also hindered by patriarchy and centered around men. Many joined the workforce when their breadwinners volunteered or were conscripted, and by 1918, about 430,000 women were employed in the defense industries alone, earning less than men "by as much as 40 percent."<sup>34</sup> Female workers were often criticized for engaging in masculine labor and thus challenging the gender roles France so relied on to strengthen its army to victory. And yet, if a woman stayed at home, she was also criticized for refusing to bolster the nation's productivity to ensure a stable home for men to return to once the war ended. No matter how they acted, women were depicted as anti-patriotic and disgraceful. Their very existence as feminine beings contradicted the glorious masculinity so desired for the state. Regardless of public perception, however, financial need was a crushing and unavoidable reality for many working-class women for whom the war meant the threat of starvation. Government efforts to support its impoverished population included meager military allowances and national unemployment benefits, neither of which provided livable income.<sup>35</sup> High-society women made attempts to help by running *ouvoirs*, or charity workrooms. But Louise Delétang, who had been critical of the classist nature of the Red Cross, reported that in one

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32 Ibid., 105.

33 Ibid., 123.

34 Ibid., 170.

35 Ibid., 172–173.

*ouvoir*, “women worked six and a half hours a day in return for a meal,” and other workrooms were not much better.<sup>36</sup> While their experiences were incomparable to violence and trauma of the trenches, they were not, as men often suggested, living in peace and luxury. Many women and girls had become financially responsible for their households overnight, and sexist gender constructs only further limited their options, which would ultimately prove to be to the country’s detriment.

Sexism and misogyny were not invented in World War I. The gendered imbalance of power in twentieth-century France was a continuation of centuries of social oppression of women, and gender dynamics would continue to evolve long after the war ended. But the style of warfare the trenches introduced permanently altered how men processed and rationalized the world around them, including the concepts of womanhood and femininity their superiors so often demonized. The patriarchal system of soldiers’ former lives combined with their new psychological distance from civilians to create a specific brand of sexism that bled into newspapers, magazines, memoirs, and fictional literature. This did not mean World War I veterans did not love their mothers, sisters, or wives—all of which were women they could acknowledge as fully dimensional beings. But the woman as a concept became a villain, the feminine enemy of masculine France. Attempts to understand the war solely through the eyes of men would greatly skew the history of the other half of France’s population. The French woman’s story of war contribution, survival of military pressure, and governmentally imposed poverty would remain lost in favor of the classic trench-war legend.

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36 Ibid., 176.

## Bibliography

- Audoin-Rouzeau, Stéphane, and Annette Baker. “Civilization, Barbarism, and War Fervour” Essay. In *14–18 Understanding the Great War*. Translated by Catherine Temerson, 113–158. New York, NY: Hill and Wang, 2002.
- Audoin-Rouzeau, Stéphane, and Annette Baker. “Battle, Combat, Violence: A Necessary History.” In *14–18: Understanding the Great War*. Translated by Catherine Temerson, 15–44. New York, NY: Hill and Wang, 2002.
- Chevallier, Gabriel. *Fear: A Novel of World War I*. Translated by Malcolm Imrie. *New York Review of Books*, 2011.
- Darrow, Margaret H. *French Women and the First World War: War Stories of the Home Front*. Oxford: Berg Publishers, 2000.
- Junger, Ernst. *Storm of Steel*. Translated by Michael Hoffmann. Penguin Books, 2004.
- Manning, Frederic. *Her Privates We*. Endeavor Press, 2018.
- Weiss, Louise. *Mémoires d'une européenne: Tome 1 (1893–1919)*. Paris, 1968.

# The Reader in the Rye

GABRIEL BELLUE



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*WRITER'S COMMENT: As soon as I read my UWP 101 course's first paper prompt—to write a narrative about a personal experience with mental health—I began thinking of ways out of it. Fearful of exposing too much of myself in writing (as if that is ever possible), I decided to sidestep the vulnerability that the prompt was asking for by writing a more traditional, literature-based paper on *The Catcher in the Rye*. Once I got started, however, I found it impossible to separate my surface-level claim that I wanted to rehabilitate the novel's lukewarm reputation from my emotions. *The Catcher in the Rye* means a lot to me because of its honest portrayal of grief and, in the end, I had to forgo my uncertainty to write my own portrayal of grief too. To those who have never lost someone close to you, I hope this paper offers some new insight into the experience. To those who have, I hope my struggle to accept my loss can offer consolation, in some small way, as you face your own.*

*INSTRUCTOR'S COMMENT: When I first read "The Reader in the Rye," I immediately felt grateful and awed. Our UWP 101 class was participating in the Campus Community Book Project, reading the graphic memoir "Marbles," by Ellen Forney. Students were assigned to write a narrative essay relating to mental health, with two to four sources. Gabriel's narrative surpasses usual genre expectations. Not only is the storytelling deeply personal, teaching us about sibling loss, but it is also part literary analysis, showing us a unique interpretation of J. D. Salinger's *The Catcher in the Rye*. Gab's use of sources also blew my mind. I expected source information about mental illness characteristics or statistics, but I never expected a historical examination*

*of the meanings that critics have ascribed to the novel. Ultimately, I feel humbled reading “The Reader in the Rye.” Gabriel shares much about sibling loss, thus giving a voice to those oftentimes too young to express their pain. Even if you never read *The Catcher in the Rye*, Gabriel’s narrative would still convince you of the impact of literature, the loneliness of grief, and the depths of sibling love.*

—Agnes Stark, University Writing Program

When my high school English teacher assigned *The Catcher in the Rye*, I dreaded reading it. It is one of those classic novels everyone has heard of, and I had heard nothing good. A synopsis from my teacher offered little besides that I would be exposed to an abundance of outdated 1950’s slang and Holden Caulfield, a protagonist who manages to spend the majority of the story doing little more than wandering New York City and complaining. To say I was uninterested would be an understatement. But I consoled myself that the book promised, at the very least, to be a quick read, so I picked it up and got to reading.

It only took a few pages for Holden’s adventure to have me enthralled. As he got expelled from his prestigious prep school and managed to annoy everyone he came across on his quest to meet up with his younger sister, he reeled me into the novel, deeper and deeper. I didn’t identify with his every thought, necessarily—he spends a good chunk of time insisting that he is better than other people, who “never notice anything” (Salinger 12) and “always clap for the wrong things” (94)—but I didn’t mind them either. I didn’t mind them because, from the first mention of his deceased brother, Allie, I recognized the quiet undercurrent of his grief as my own. In the ten years since my own brother died in a car accident, I have never read something that captured my feelings quite like this.

It should not have taken me so long to find a story I could connect with, because for all my conviction that I was alone in the grief I faced, I knew that was untrue. Five to eight percent of people experience a sibling death in their childhood (Fletcher et al). Though this percentage is hardly high, comparable only to equally consequential events like maternal death, it serves as a reminder that my pain was not unknowable. Yet I was so certain it was. My brother’s death fell upon me like a heavy fog, and I imagined myself suddenly separate from my peers. I turned to whatever

books I could get my hands on, hoping that they might make sense of my insurmountable grief for me. None did. Katherine Patterson's *Bridge to Terabithia* and Barbara Park's *Mick Harte was Here* came the closest to explaining the immediate stab of loss, but as I grew up and grew into my newfound position of the eldest child in my family, they faded in relevance for me.

*The Catcher in the Rye* did the exact opposite. Emotions burst from the pages and forced their way to the forefront of my mind, and as I processed Holden's supposedly obnoxious behavior, I found myself nodding along to the complexity of his grief. He does not mention his brother often, but he does mention his fascination with finality, whether that means preserving his brother's keepsakes or ensuring he says goodbye to a place before he leaves it. I understood this fascination innately. I also understood the relationship that unfolds with his younger sister, and why he is so intent on protecting her innocence for as long as possible. I have always felt the same way toward my own sister—as if giving her more memories than I had of myself and my brother might, in some small way, make things right. As the novel ends with Holden crying over the sight of his sister happily enjoying a carousel ride, I felt as if one of the least obvious but most powerful symptoms of my own loss was finally recognized.

After finishing the novel, I hurried to read reviews of it. Holden's story validated mine, and so I imagined seeing others acknowledging his pain would be like an acknowledgement for myself, as well. However, reality quickly dashed my hopes.

In the countless reviews I read, few noted Holden's grief as a very significant part of the novel, the way I believed it was. *The New Yorker's* Adam Gopnik praised that "no book has ever captured a city better than *The Catcher in the Rye* captured New York in the forties," and the BBC's Finlo Rohrer described it as "the defining work on what it is like to be a teenager" (Gopnik; Rohrer). In David Shields and Shane Salerno's biography on the author, J.D. Salinger, they insist that the novel "can best be understood as a disguised war novel" (Shields and Salerno). Looking at these reviews and many more together, I came to a realization. My belief that the novel is primarily about grief is not a popular one.

What could be called a Holden-esque reaction followed. I decided that those reviews were wrong, and that the writers behind them just didn't *get it* like I did. Without meaning to, I caught myself echoing

Holden's own self-important mindset, assuring myself that I was correct while everyone else was—to use his own words—a phony. Holden's grief saturated every page of the novel. My own saturated my every passing day. How did others not see that?

It was this reaction to the general consensus on *The Catcher in the Rye* that taught me more about grief than the actual novel did. The book reminded me that, despite the not uncommon experience of sibling death, it remains an isolating incident. In her 2017 dissertation on the impact of sibling death, PhD candidate Jan-Louise Godfrey found that many adolescents who experienced a sibling death felt not only increased grief, but an increased sense of disenfranchisement as well (Godfrey). These people often feel, as I certainly did, that their relationship with their late sibling was not recognized in its full capacity as they grieved, and that few people truly understood their pain. In retrospect, I realize that my own feelings of that nature were surfacing when I read through the reviews of *The Catcher in the Rye*, and I felt my own grief being as disregarded as Holden's was.

Ultimately, I had to do as Holden does, and accept this reality for what it is. I cannot control what people think of a book, just as much as I cannot control the loss I have faced. In both cases, grief proves itself to be impossible to ignore or understand. It has been Holden's words, in all their pretentious and dramatic glory, that remind me of this. As he says upon departing his school, "I don't care if it's a sad good-bye or a bad good-bye, but when I leave a place I like to know I'm leaving it. If you don't, you feel even worse" (Salinger 7). I can think of no better string of sentences to hold onto in the face of grief. Such a deep loss can never be forgotten or made right, but the comfort that comes from merely acknowledging it and processing it is something. It is enough.

## Works Cited

- Fletcher, Jason, et al. "A Sibling Death in the Family: Common and Consequential." *Demography*, vol. 50, no. 3, pp. 803–826. doi.org/10.1007/s13524-012-0162-4
- Godfrey, Jan-Louise. "The Impact of Sibling Death on Adolescent Psychosocial Development and Psychological Wellbeing." *Swinburne University of Technology*, Faculty of Health, Arts and Design Swinburne University of Technology, 2017. researchbank.swinburne.edu.au/file/ea74d804-5c86-4f58-aa31-d20788f41079/1/jan\_louise\_godfrey\_thesis.pdf
- Gopnik, Adam. "J. D. Salinger." *The New Yorker*, 19 June 2017. www.newyorker.com/magazine/2010/02/08/j-d-salinger
- Rohrer, Finlo. "Why Does Salinger's *Catcher in the Rye* Still Resonate?" *BBC News*, 5 June 2009. news.bbc.co.uk/2/hi/uk\_news/magazine/8084931.stm
- Salinger, J. D. *The Catcher In The Rye*. Little, Brown, 2019.
- Shields, David, and Shane Salerno. "JD Salinger | Book Introduction to Salinger." *Public Broadcasting Service*, 4 Aug. 2015. www.pbs.org/wnet/americanmasters/jd-salinger-book-introduction-to-salinger/2791/

## Una Platica Entre Familia, But Make it Mental Health

MARIBEL ORTEGA



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*WRITER'S COMMENT: Although many themes were circulating as ideas for my final research project in UWP 101, I could not shake the idea of including a part of me into the piece. All quarter long, Professor Whithaus provided me with invaluable insights on my work and guided me toward better approaches in personal writing and storytelling. With his encouragement, I was able to reach for my roots within the Latinx culture, reflect on a culmination of my experiences and look toward its effects and the change I want to make for the future. I attained a greater sense of self-reflection by analyzing my upbringing, describing my parents' personal hardships and my own. This became the driving factor for my research of the intergenerational trauma present within the Latino household. Because I have endured trauma myself, I strive to work in healthcare as a physician assistant in underserved populations to inhibit the further perpetuation of this cycle. For these reasons, I felt it was imperative to raise awareness and validity of mental health disorders within the Latinx community.*

*INSTRUCTOR'S COMMENT: Maribel Ortega's "Una Platica Entre Familia, But Make It Mental Health" is a complex essay that balances research and the personal. Reading her essay makes me think that often we talk about studying mental health or studying cultures at a distance, from outside of them, in order to understand them better. Maribel's work gets underneath that distancing. She is not only looking at intergenerational trauma and Latinx culture, but analyzing its impact within a family. From the opening scene until the end of the essay, Maribel explores how stress, how trauma, lingers within a family and how it is passed from generation to generation. Throughout the UWP 101 course, Maribel's*

*writing was careful and nuanced, but also personal in a way that most writers are not willing to risk. I know that she plans to work in healthcare, and her attention to detail will serve her well there. But, for me, it's her ability to both analyze and personalize the impacts of intergenerational trauma that is remarkable.*

—Carl Whithaus, University Writing Program

**“¿Mami? Are you okay?”**

*“Por favor vete.”*

**“What’s going on, are you sick again?”**

*“No me siento bien, déjame en paz.”*

**“Is it your head, mami? ¿Tienes dolor de cabeza?”**

*“No me quiero poner ‘mal’ como las otras veces, pero estoy cansada. ¡Ya quisiera poder irme de esta vida! No hay punto en existir. Por favor déjame sola.”*

**“Okay . . . ya me voy.”**

Instead of leaving, I sat there on the staircase as I had done many times before and listened to my mother sob loudly, scream, and hit the bathroom door out of frustration. I knew the pattern far too well. She would let it out and ignore everyone for the remainder of the day, silently still upkeeping the responsibilities of the entire household. Despite her feelings of sadness and lack of energy, she would put a load of laundry to wash, clean up the house, make dinner, and ensure my father’s plate was served first.

When I was younger, I associated my mother’s depressive symptoms with headaches or stomach aches. I never understood why my mother would get ‘sick’ so often, I just knew that she had a lot to deal with: not sleeping for days on end, having an irregular appetite—sometimes cooking for everyone else and forgetting to eat herself, sometimes sitting there for hours and eating too much. She was constantly putting herself down, unable to recognize her accomplishments and her purpose in life. As the only other female in my family growing up, I felt that it was up to me to make everyone else’s life a bit easier. To relieve them of their burdens. This was reflected early on in my responsibility to the family

as a translator and interpreter. Because my sister is fourteen years older than me, she left for college when I was about five years old. My brother helped in the ways he could, but as early as third grade I was depended on by my mother and father to ask for help at stores, translate at school meetings and open houses, talk to operators to pay bills over the phone, and so on. This parent-child dependency was established, and as a result, I lacked the necessary autonomy other children began to gain as we grew into adolescence. Garcia et al. (2010) discusses this larger influence from Latino parents onto the children to follow certain social rules and abide by Latino ideals. Even if I felt overwhelmingly affected by my father's abusive actions or my brother's behavior or upset by the way someone at school would treat me, I quickly knew it was my role to carry the burdens of everyone else and accommodate their needs. I was to fulfill my own needs and wants until the very end as I had seen my mother relentlessly do her entire life within her own capacities.

My family, like many other Latino families, continually place a greater emphasis on authority and familism in order to uphold the traditional Latino ideals of a patriarchal household. This is further highly impacted by a major component of the Latinx culture, which is gender roles. Having personally experienced this growing up, it placed an immense pressure on me to abide by them and, to this day, gender roles are still instilled among children at an early age and in general within the Latino family dynamic as a whole. Women are expected to be soft, emotional, and submissive, while men are taught to be strong and unemotional in all that they do. Nuñez et al. (2016) discusses multiple studies that show that there is typically a trend in groups of boys and men toward ignoring or minimizing mental health problems due to this "machismo cultural value." During family arguments, I was taught to hold my tongue, to never speak against or above my father because "calladita se ve mas bonita" [by being quiet, one is more beautiful (valued)]. On the other hand, my brother was treated completely different. He was verbally and physically abused because he could 'handle it,' because he was supposed to be strong and taught not to cry regardless of the circumstance. This construct of machismo influences men to assume a masculine role in society (Nuñez et al., 2016). My brother was taught to be brave, to assert dominance over women, but never over his own father.

This gendered upbringing is largely due to the internalization present that stems from intergenerational trauma. Intergenerational

trauma is the way in which trauma experienced in one generation affects the health and wellbeing of descendants of future generations (Sangalang & Vang, 2016). As a result of major trauma, there is a sense of feeling as though your own mental stressors and anxieties are forbidden from acknowledgement and future discussion to anyone. My mother, having forcefully adapted to a new language in a new country, working a new job as a housekeeper to Americans in Malibu, CA, went through many changes in a very short period of time. Some of her major traumas stem from the difficulty in acculturation, documentation status (specifically the process of becoming a U.S. citizen), and being separated from her entire family in Mexico. Garcia et al. (2010) points out that the complexities of the acculturative process vary by individual, and for that reason create intra-familial challenges when the rates of acculturation are different among the youth and their parents and, in this particular case, from immigrant parents to first-generation children. My father too had a similar experience to my mother's when first arriving in the U.S. and because of this, they both unconsciously and consciously developed an even deeper negative stigma of mental health. The reality was that they both have difficulty managing insomnia, panic and anxiety attacks, chronic depression, etc. However, rather than identify the cause for their deteriorating physical, mental, and emotional health, my parents continued to unhealthily cope. My mother dug herself deeper into serving others, working herself to the point of exhaustion and taking care of my maternal grandparents as they had become more ill over the years. Doing their laundry, doing the cooking, looking after the home and taking care of their medical expenses. My father dug himself deeper into alcohol. He began to disregard the entire family, drinking himself to a slumber every night and taking out his anger on everyone, especially my brother. This also contributed to his disregard for himself; he no longer carried the same passion he had grown over the years for his work (landscaper) and did not care to build relationships with his clients as he had done in the past. His lack of attention to his mental health and development of alcoholism led him to have many health issues such as Type II diabetes, high cholesterol and blood pressure, and sequentially cirrhosis of the liver and kidney failure. All these components and details that I have shared that make up my parents—the stress, the pressure, the mental health setbacks, the physical and emotional trauma, the burdens they carry—went unacknowledged. My siblings and I were either blind

to their trauma at a young age or told to “turn a blind eye” once we were old enough to know better. Eventually we became old enough to identify the triggers ourselves because we in turn were also experiencing the trauma. Their inability to cope transferred into our inability to cope.

Moreover, this is directly reflected in the way my sister, brother, and I have learned to respond to major life events like divorce, death, relationship dynamics and other daily life challenges. Studies have shown that Latino youth (especially first-generation individuals) in the U.S. report higher rates of mental health problems and associated negative outcomes, including anxiety, depression, suicidal ideation and suicide attempts, than non-Latino White and Black youth, and females report higher frequencies than males (Garcia et al., 2011). My sister being the first in my family to pursue higher education was deeply overwhelmed by feelings of homesickness, and she had great difficulty adapting to a new environment at a university twelve hours from home. Having switched her major multiple times, feeling misguided and lacking the necessary support from her family members, her peers, and faculty, she ultimately felt alone and like a failure. She dealt with suicidal ideation and a suicide attempt while in college—something so difficult for her to come to terms with and for my parents to understand and validate. Through intergenerational trauma, my brother also developed strong attachment issues and immense anxiety. Growing up, because my parents would ignore the cues that indicated the need for increased attention for their children, we were never taken seriously (just as they had not been by their parents). My siblings and I were always told, “aguántate porque yo pase por peor y no me miras quejar” which roughly translates to, “maintain your composure because I experienced worse and you do not see me complain.” My brother has undiagnosed ADHD (attention deficit hyperactivity disorder) but because it was neither validated at school or at home, he looked to distract himself with multiple friend groups and eventually became influenced at an early age to abuse drugs and alcohol. For this reason, he has not been able to heal from past childhood traumas or seek medical help and attention for the mental health issues he has always carried.

The development of mental health issues like depression, anxiety, attachment disorder, and substance abuse is greatly influenced by the presence of trauma and enactment of this intergenerational trauma. Both my mother and father, having immigrated to the United States

at the very early ages of fifteen and seventeen, respectively, were highly impacted by the language barrier present and the lack of support and financial stability, in addition to being undocumented at the time. All of these major factors deeply influenced how my parents navigated life amidst the obstacles, the types of coping mechanisms they developed along the way, and how they sequentially went on to raise their children. There were always so many physical problems to solve, such as devising plans to help bring more family members from Mexico to California, putting together enough money for our school uniforms and supplies, and organizing familial childcare so that my parents could work up to seven days a week. Due to these real-life stressors, my parents worked and my mother still continues to work to the extent that their mental health issues and traumas were pushed aside, went unacknowledged, and eventually never discussed. This is depicted in Makol and Polo's (2018) study on parent-child endorsement discrepancies among youth at chronic-risk for depression, which found that Latinx parents will place a greater importance over socialization goals and lack the necessary attunement (reactiveness we have to another person) for specific problems pertaining to themselves and their child.

As a result, because all that Latinx adolescents have known is to internalize the hardships that we experience, we unknowingly have also perpetuated the cycle of reserved emotions and minimizing mental health disorder consequences that result from such events or actions just as our parents have done. This intergenerational trauma Latinos carry contributes to the lack of mental health validity and awareness within Latinx communities. It is often so difficult to unpack the traumas one has experienced and, in the process, to help others as well. This is because Latinx communities lack the adequate knowledge and resources to learn the ways of self-healing and seeking mental health guidance from health professionals and therapists. When I reflect on my own journey of healing and seeking help for my mental health issues, it is still difficult even now to say out loud and admit. There is such a large negative stigma over mental health in the Latinx community that even individuals like myself, who are becoming educated, more aware and open to the healing process, have difficulty expressing this to our friends, family, and ourselves. Nuñez et al. (2016) states that given the immense vulnerability Latinos have to negative cognitions and emotions, it is crucial to examine sociocultural correlates of emotional distress—meaning we must look to

the root of the cause within the Latino culture. The barriers to open discussion about mental health must first be taken down. This begins with dismantling ideas of authority, gender roles, machismo, and most importantly allowing vulnerability to be present. Kopacz and Bryan (2016) speak on this particular idea that in order to truly understand the transmission of intergenerational trauma, we must look at the ways in which we can effectively break the cycle that is carried from one generation to the next. Although almost seemingly impossible to accomplish, by doing so we would be creating an open and comfortable space to discuss the uncomfortable. To not only express our own worries and stressors to our parents but also in turn allow them the opportunity to reflect on their own traumas and triggers. With improved parental awareness and validity of mental health there similarly would result a reduction in the stigma that surrounds mental health.

For generations, lack of mental health awareness and validity has been perpetuated within our communities and has kept Latinos from truly thriving. It is important to me and should be important to you that the Latino community and your peers receive the help they desperately need to not only be successful in life but also physically, mentally and emotionally healthy. I believe that attaining adequate guidance from mental health professionals and self-healing from past traumas is the key to ultimate growth. Hence, the healing must come from within our families and within our communities to sequentially reduce the stigma against mental health disorders and cease the ongoing transmission of intergenerational trauma.

***“Mami, how are you? I can’t wait to come home and see you! ¿Estás preparada para platicarme de todo?”***

*“I miss you. Que bueno que vienes, no me ha sentido bien y necesito con quien platicar.”*

***“You know you can tell me whatever is on your mind. Aquí estoy para escucharte y apoyarte.”***

*“Ayer me dio ansiedad en el trabajo y no me sentía confiada en manejar. No supe qué hacer pero me acordé de ti. You told me to take my time, take deep breaths and wait until I felt relaxed. Gracias a ti, I made it home safe.”*

***“Que bueno mami, I’m happy to know that helped and you feel better. Thank you for telling me about your anxiety. Sobre todo, te quiero.”***

*“I love you more.”*



*Maria de Jesus Cosio,  
My mother*



*Sergio Ortega Alvarez,  
My father*



*Sergio Ortega,  
My brother*

## References

- García, C. M., Gilchrist, L., Vazquez, G., Leite, A., & Raymond, N. (2011). Urban and Rural Immigrant Latino Youths' and Adults' Knowledge and Beliefs about Mental Health Resources. *Journal of Immigrant and Minority Health, 13*(3), 500–509. doi.org/10.1007/s10903-010-9389-6.
- Kopacz, M. S., & Bryan, C. J. (2016). If Intergenerational Transmission Is the Problem, Then What Is the Solution? *Neuropsychopharmacology, 41*(13), 2965. doi.org/10.1038/npp.2016.23
- Makol, B. A., & Polo, A. J. (2018). Parent-Child Endorsement Discrepancies among Youth at Chronic-Risk for Depression. *Journal of Abnormal Child Psychology, 46*(5), 1077–1088. doi.org/10.1007/s10802-017-0360-z
- Nuñez, A., González, P., Talavera, G. A., Sanchez-Johnsen, L., Roesch, S. C., Davis, S. M., Arguelles, W., Womack, V. Y., Ostrovsky, N. W., Ojeda, L., Penedo, F. J., & Gallo, L. C. (2016). Machismo, marianismo, and negative cognitive-emotional factors: Findings from the Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study. *Journal of Latina/o Psychology, 4*(4), 202–217. doi.org/10.1037/lat0000050.
- Sangalang, C. C., & Vang, C. (2016). Intergenerational Trauma in Refugee Families: A Systematic Review. *Journal of Immigrant and Minority Health, 19*(3), 745–754. doi.org/10.1007/s10903-016-0499-7

# The Economics of Desire in Christina Rossetti's "Goblin Market"

AMANDA ALBRECHT



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*WRITER'S COMMENT: Although I initially approached Christina Rossetti's "Goblin Market" with great admiration and even greater curiosity, I was puzzled by my inability to fully agree with just one single interpretation for the poem. Originally written for my ENL 10B class, my assignment was to interpret a work from the quarter as I wished, and while I immediately knew I wanted to choose "Goblin Market," I didn't know just how I was going to do it. Upon researching, I found out that the two most popular interpretations for the poem regarded it as either as a critique of Victorian capitalism or as a feminist exploration on gender. After several days of debating what to write and with time running out, I thought "why not combine the two?". I realized an opportunity to explore one of my favorite works of the quarter through a triple lens of sexuality, history, and economics, and despite worrying I was overreaching, I wrote my paper exploring how Rossetti's expression of female sexuality paralleled and defined its exploration of Victorian-era economic markets.*

*INSTRUCTOR'S COMMENT: In Spring 2021, I taught English 10B as a large lecture class entirely on Zoom. This is a required course for the major, covering literatures in English from 1700–1900. Given that 10B is a requirement, that it was spring quarter, and that we'd all spent a year on Zoom, I expected the course to be rather dull. I thought the students would be tired and that I would have trouble engaging them through the distanced online medium. Imagine my delight when the students turned out, on the first day of class, to be a lively, curious group, full of enthusiastic readers who blew up the Zoom chat function*

*in almost every class meeting. On the day we discussed Christina Rossetti's "Goblin Market" (1862), I thought the class would be even more talkative than usual, for the poem is typically a student favorite weird, wonderful, endlessly interpretable. But the chat that day was largely silent. Were the students finally worn out? Had they had it with poetry? Or were they just stunned into silence by one sister "warbling for the mere bright day's delight, / One longing for the night"? A few weeks later, to my surprise, it transpired that more than half of the students had chosen to write their final essay on "Goblin Market." Amanda Albrecht's paper was one of several truly excellent papers I was pleased to receive. It considers the poem's depiction of economics, currency, and exchange in conjunction with its vivid, unforgettable allegory of Victorian female sexuality and sisterly solidarity. Especially impressive in its integration of secondary sources and its creative close reading of the poem, Amanda's essay is a testament to the remarkable work our students produced during a very difficult academic year.*

—Elizabeth Miller, Department of English

**N**early 160 years after its initial publication, Christina Rossetti's "Goblin Market" has continued to captivate readers and critics alike with the myriad of arguable interpretations that are able to be raised from within the text. Ranging from a didactic children's fairy tale to a reimagining of the figures of Eve and Christ, the poem's chameleon-like ability to adapt to any one given interpretation makes investigating the poem through a specific lens difficult. While many critics agree the poem offers a nuanced commentary on the pervasive nature of capitalism and consumerism in the nineteenth century and the alluring desire for participation it brings, few critics connect this to the way the poem parallels this desire with female sexuality and expression. Interlinking economic and sexual desires with the historical knowledge of the way women in the nineteenth century responded to these types of topics and using economic-related symbols to enhance the alluringly penetrating feelings of desire and control re-envision "Goblin Market" as a cautionary tale exploring the dangers and economics of desire.

In order to fully comprehend Rossetti's ability to skillfully combine marketplace politics with sexual desire, a brief understanding of both Victorian marketplace politics and the role of women in the nineteenth

century is required. Beginning in the Victorian era of England, commerce began to expand from a national to international scale, and Britain was in a great position, with sterling being the only “international currency whose value was wholly backed by gold reserves” (“Victorians: Commerce”). However, with such an expanding global economy and international presence, feelings of paranoia and uncertainty invaded the public sphere. In addition, the expression of sexuality (especially female sexuality) was a social taboo that ultimately created feelings similar to the uncertainty of the economic sphere, albeit fueled by sexual repression and tensions.

To begin with, women did not often participate in the economic side of the marketplace, but commonly did have jobs as homemakers or cooks, an idea that is expressed in Laura and Lizzie’s pastoral lifestyle: “Early in the morning / When the first cock crowed his warning, / Neat like bees, as sweet and busy, / Laura rose with Lizzie: / Fetched in honey, milked the cows” (Rossetti 199–204). While Laura and Lizzie seem to embody the role of typical domestic women, the subsequent lines reveal the strain that the goblin market has put on Laura’s relationship with her expected homemaker role: “Lizzie with an open heart, / Laura in an absent dream, / One content, one sick in part; / One warbling for the mere bright day’s delight, / One longing for the night” (210–214). With the prospect of a new type of freedom being offered to Laura, it sexually and economically challenges her idea of her expected domestic lifestyle, as she “longs” for freedom and is “sick” with want, challenging traditional Victorian social norms for women that prevent them from expressing desire, whether it be sexually or economically.

Shifting away from the women in the poem, the goblin men embody the unknown dangers and uncertainties of a newly expanding commercial English society with their abrupt appearance, which begins with the lines, “Morning and evening / Maids heard the goblins cry” (Rossetti 1–2). The emphasis on the liminal times of day enforces the constancy of the vendor’s presence, framed as an intrusion with the unpleasant tone of the word “cry,” rather than as a pleasant-sounding jingle or exclamation.

The goblin vendors, aware of their status, provide an array of fruits as the centerpiece of the marketplace. Composing the poem’s first twenty-eight lines, the fruits listed contain much variety in terms of their origin: cranberries (11) from North America to figs (28) from Asia and the Mediterranean, yet their origins remain abstracted from the

list. According to Victor Roman Mendoza, “In order for the fruits to be made exchangeable, their particularities must first be abstracted so that their value—and, later, their price—might be determined” (918). Being consciously aware that such fruit *certainly* has to have different places of origin while simultaneously not disclosing where these places are nor what their prices are gives the goblin vendors a sense of power in the situation, knowing what the customer does not and using it to their advantage. Similarly, the parenthetical line, “Men sell not such in any town” (Rossetti 101) reinforces the fruit’s unique and differing origins compared to the traditional marketplace, acting as an invading force.

Although short in length, line fourteen (Rossetti) states an important fact that “[the fruits were] all ripe together,” which would have been miraculous in the nineteenth century, considering the state of international affairs and trade capabilities, in addition to the lack of large-market grocery stores or vendors that could sell produce that differed either in origin or in seasonal availability. While the array of fruit undoubtedly shows off the economic prowess of the goblin vendors, the itemized presentation of the lines offers an alluring undertone that assures “consumer enjoyment . . . and is itself visually alluring and poetically seductive” (Mendoza 921). The tantalizing nature of the spondee “come buy, come buy” (Rossetti 14, 19, 31) reads almost as a sexual proposition, framing the list as a promise that feeds into the eroticism of the senses. Phrases such as “figs to fill your mouth” (28) entices the tactile, oral, and visual senses, and the self-awareness of the line “sweet to tongue and sound to eye” (30) reinforces the notion that the vendors are aware of the temptation they are selling and use the sensual undertones of their oral advertising as well as the fruit’s enticingly mysterious origins to allure their customers.

The knowledge of sensual presentation of the fruits is not possessed just by the goblin vendors. The poem’s two female protagonists, sisters Laura and Lizzie, possess a conscious awareness of the vendor’s allure, with Lizzie stating, “Their offers should not charm us, / their evil gifts would harm us” (Rossetti 65–66). Two distinct features of this line stand out, both within the phrase “evil gifts.” “Evil” is a description given to the fruits, but the fruits give off no indication of being corrupted, physically or morally; their only notable quality is being exotic, which raises the question of why are the fruits deemed as evil. The fruit’s exotic yet unknown origins and its sexual connotations are both inherent and—

as a result of the vendor's advertising—plays into the Victorian-era fears of both an expanding marketplace and a blossoming sexuality of women, which is why they are deemed as “evil”: they embody two of the biggest social fears and societal challenges that plagued the period in which the poem was written. In addition, the word “gift” is an interesting signifier of economic exchange; as mentioned, there exists abstraction within the itemization of the fruit, and throughout the poem, there is a lack of actual money ever exchanged. The act of receiving a gift does not have to be consensual, which attributes to the poem's pairing of sexual exchange coupled with economic exchange.

A statement made by Laura a few lines prior additionally reveals the sisters' awareness of the tempting situation: “We must not look at goblin men / we must not buy their fruits / who knows upon what soil they fed / their hungry thirsty roots?” (Rossetti 42–45). “Upon what soil” relates back to the blossoming international market that was evolving in England at the time as origins for goods started to become more varied. Additionally, the phrase relates back to the vendor's abstraction of the fruit's origins, which the sisters have noted as the vendors are clearly using an element of mystery to their advantage. “Hungry thirsty roots” is another phrase that warrants attention; as Jill Rappoport writes, “The enjambment carries us to roots that presumably belong to the fruits but whose adjectives ‘hungry’ and ‘thirsty’ better describe nineteenth-century stereotypes of rapacious savages sprung from an exotically other family tree” (866–867). While “hungry” and “thirsty” are adjectives that seemingly connect to the aforementioned “fruits,” the enjambment of the lines allows the words to carry a dual meaning in how they refer to the vendors: the goblin vendors are “hungry” and “thirsty” for participation in the economic and social spheres, framing them as invaders that carry with them a sense of uncertainty.

In economics, one of the key defining characteristics is exchanging money in order to receive goods—yet in “Goblin Market,” no such exchange ever occurs. The primary exchange is best described as “Laura's purity and innocence exchanged for mature sexuality, experience” (Cunningham 24). Laura is put into a position where her unexplored desire is being pushed to its limits, and she commits to sacrificing a part of herself to gain two things: economic freedom and sexual liberation. Laura provides a synecdochal form of gold by clipping “a precious golden lock” (Rossetti 126) of her hair. Laura sacrifices her bodily autonomy yet

is allowed to participate in the market, exchanging “monetary” goods for a chance at sexual freedom.

With reference to the abstraction of the fruits’ monetary value, for gold to be used as a currency for a means of exchange seems odd, considering how gold does not appear in the poem with “transactional value,” but rather with “use-value” (Mendoza 924). Gold so far has only been used as a descriptor, with “golden head” (Rossetti 184) and “golden dish” (58), meaning that the use of gold as a medium of exchange was chosen by the vendors themselves and was not set by an outside economy. By setting up their own rules and by allowing the synecdochal form of gold in exchange for the real thing, the vendors continue to exert power over their customers.

No longer a “virgin” of the economic market, Laura immediately “dropped a tear more rare than pearl / Then sucked their fruit globes fair or red” (Rossetti 127–128), with the onomatopoeia of the verb “sucked” and the phallic imagery of “globes” providing more than enough cues for this exchange to be read as sexual in nature. While prostitution is defined as “the practice or occupation of engaging in sexual activity with someone for payment (“prostitution n1”), a more colloquial definition exists that defines prostitution and other sex work as “selling one’s body.” The method in which Laura pays for the fruit seems to fit this more colloquial definition: she gives away part of her body, and then performs what can be considered a sexual act in which “She sucked until her lips were sore” (Rossetti 136). While performing as a ritual for the loss of virginity, the scene connects the economic and sexual exchanges with the concept of a blossoming female sexuality and premarital sexual relations—two socially taboo concepts that permeated the Victorian social sphere.

While Laura’s bodily exchange with the vendors might read as a far-fetched interpretation, additional support can be derived from the unseen character of Jeanie. The only named characters are Laura and Lizzie, so the inclusion of Jeanie, although brief, stands out. Jeanie’s situation, narrated similar to an urban legend, acts as a cautionary tale to the sisters that skillfully narrates the dangers of interacting with the goblin men and the consequences of expressing sexual desire and freedom.

Jeanie’s story is told more in depth after Laura’s return from her interaction with the vendors; Lizzie gently scolds Laura by reminding her of the tale of Jeanie, beginning with “Twilight is not good for maidens; / should not loiter in the glen / in the haunts of goblin men” (Rossetti

144–146). The use of the word twilight creates a connection that is followed into the next line: “How she met them in the moonlight . . . / ate their fruits and wore their flowers / plucked from the bowers” (148–151). “Twilight” and “moonlight” come together to portray Jeanie as “a lady of the night” a euphemistic phrase for a female prostitute that was around well before the time of Victorian England (“lady of the night n2”). While “bowers” usually refer to gardens, the possibility that this exchange occurred in Jeanie’s bedroom is also possible, in which “plucked” combined with “flowers” clearly symbolizes a loss of virginity. Jeanie then begins to feel both sexually and financially liberated but, dependent on the vendors, she wastes away, with lines such as “Found them no more, but dwindled and grew grey” (Rossetti 156) paralleling Laura’s own fate a few stanzas later: “Her hair grew thin and grey; She dwindled, as the fair full moon doth turn” (277–278), with direct parallels on the words “dwindled” and “grey.” Jeanie’s tale ends with Lizzie planting daisies on her grave that “never blow” (161), providing an image of infertility “that touches upon the personal and social ramifications of giving in to premature [sic], selfish sexuality” (Cunningham 25). As Laura begins to feel the ramifications of her act, which manifests as physical ailments such as the greying of her golden hair, the synecdochical version of gold returns; not only an abstraction for the loss of money, the golden hair now represents a symbolic loss of innocence, health, and happiness.

With the loss of her sister’s happiness heavy on her mind, Lizzie, not subjecting herself to the same fate as Laura or Jeanie, ventures out to meet the vendors, armed with “a silver penny in her purse” (Rossetti 324), which has been the subject of much debate from critics and literary scholars who attempt to deduce its greater symbolic meaning. Historically, in the nineteenth century, silver pennies were a highly valued form of currency, even beating out their copper counterparts. However, by the midcentury, the silver penny was no longer a regular form of currency, so “The goblins’ refusal to accept it as an equivalent for Laura’s hair may simply mean that one silver penny holds insufficient value compared to gold” (Rappoport 864). However, the silver penny, despite being an object of exchange, is a symbol of Lizzie’s domestic duty, which includes her healthy, strongly-bonded relationship with Laura—something that the goblin men will experience as a result of their malicious intentions.

Unable to form relationships that are not built on exchange, the goblin vendors’ ultimate desire is to consume their consumers and, like

the fruit they sell, “toss the rinds and pits away once they have found temporary satiety” (Christensen). Lizzie’s interaction with the vendors is immediately less tempting and more menacing than Laura’s and, “mindful of Jeanie” (Rossetti 364), she “tossed them her penny” (367). Despite giving away the very thing that grounds her and putting herself in a vulnerable position much like Laura and Jeanie, Lizzie “held out her apron” (366), a connection to her domestic-fantasy lifestyle, which she must let go of in order to save Laura. Lizzie puts on a facade of both pseudo and real vulnerability by letting go and revealing her comfortability in the domestic sphere, allowing the vendors to take full advantage of her.

The vendors witness Laura’s vulnerability and do not allow her to hold power in the situation by offering her to “Sit down and feast with us,” (Rossetti 380) to which she denies. Lizzie’s refusal to buy into the goblin vendor’s economics of desire angers them greatly, and they insult her with names “reserved for women who step outside the bounds of propriety and traditionally prescribed gender roles” (Christensen): “One called her proud, / Cross-grained, uncivil” (Rossetti 394–395). When Lizzie demands “Give me back my silver penny” (388), the goblin men respond with physical violence that leads to a scene undoubtedly representative of rape: “They trod and hustled her / Elbowed and jostled her . . . Tore her gown and soiled her stocking” (399–400, 403–404). All of the verbs that Rossetti uses are violent, sexually charged actions against Lizzie, who has gone from an agent of economic and sexual power to a patient of one. However, Lizzie’s refusal to give in and eat their fruits reinforces the power she exerts in the situation, despite being a victim, and moreover reveals the importance of domesticity and sisterhood as her key values; she subjects herself to sexual and economic theft by the male goblin vendors in order to save Laura.

After this scene, the men finally quit: “At last the evil people, / Worn out by her resistance / Flung back her penny,” (Rossetti 437–439). Rossetti’s use of the word “people” is the only non-specific gender label in the poem, which is significant because from a structural standpoint, “men” would have been a much easier rhyme. By using this non-gendered term for the first time, Rossetti “indicts Victorian society for its implicit role in perpetuating the rigid attitudes that limit female autonomy” (Christensen), ultimately broadening the scope of those who are the perpetrators of malicious economic and sexual thievery.

*The Economics of Desire in Christina Rossetti's "Goblin Market"*

Triumphant yet damaged, Lizzie returns home to Laura with “her penny jingle / Bouncing in her purse,— / Its bounce was music to her ear” (Rossetti 452–454). The final appearance of the penny and its onomatopoeic jingle parallels the goblin men’s earlier “iterated jingle / Of sugar-baited words” (233–234), showing the exchange of power that has occurred from the vendors to Lizzie as result of Lizzie’s persistence in her domestic values and her love toward her sister. The penny marks her status as a domestic caregiver and a loving sister that triumphs over the vendors’ conniving and tempting ways, as a symbol far more complex beyond its presented status as a means of monetary exchange.

By examining the complicated, exchange-focused relationships between female characters and the male goblin vendors in Christina Rossetti’s “Goblin Market,” a picture connecting economic and sexual desires is created, aided by historical knowledge of economic and social features of Victorian England, as well as recurring economic-based symbols throughout the poem. Sexual and economic freedom is presented in a wish-granting-like fashion, yet the consequences of acting on temptation creates far more problems than just giving up metaphorical silver and gold. By linking the two heavy handed subjects together, a cautionary tale exploring the economics of desire is born.

## Works Cited

- Christensen, Matt. "Can I Know It?—Nay: An Alternative Interpretation of Christina Rossetti's 'Goblin Market.'" *The Victorian Web*, 2005, [victorianweb.org/authors/crossetti/christensen1.html](http://victorianweb.org/authors/crossetti/christensen1.html)
- Cunningham, Dawn. "We must not look at goblin men, We must not buy their fruits": The Politics of Feminine Consumption and Sexuality in Christina Rossetti's 'Goblin Market.'" *Articulāte*, vol. 14, article 3. [digitalcommons.denison.edu/articulate/vol14/iss1/3](http://digitalcommons.denison.edu/articulate/vol14/iss1/3)
- "lady of the night, n2." *OED Online*, Oxford University Press, June 2021, [www.oed.com/view/Entry/271934](http://www.oed.com/view/Entry/271934)
- Mendoza, Victor Roman. "'Come Buy': The Crossing of Sexual and Consumer Desire in Christina Rossetti's Goblin Market." *ELH*, vol. 73, no. 4, Winter 2006, pp. 913–947. [doi.org/10.1353/elh.2006.0031](https://doi.org/10.1353/elh.2006.0031)
- "prostitution, n1." *OED Online*, Oxford University Press, June 2021, [www.oed.com/view/Entry/153086](http://www.oed.com/view/Entry/153086)
- Rappoport, Jill. "The Price of Redemption in 'Goblin Market.'" *SEL Studies in English Literature 1500–1900*, vol. 50, no. 4, 2010, pp. 853–875. [english.as.uky.edu/sites/default/files/faculty\\_publications/Jill%20Rappoport/SELGoblinMarketarticle.pdf](http://english.as.uky.edu/sites/default/files/faculty_publications/Jill%20Rappoport/SELGoblinMarketarticle.pdf)
- Rossetti, Christina G. *Goblin Market and Other Poems*. Cambridge: Macmillan & Co, 1862. Retrieved from [rpo.library.utoronto.ca/content/goblin-market](http://rpo.library.utoronto.ca/content/goblin-market)
- "Victorians: Commerce." *English Heritage*, 4 Feb. 2014, [www.english-heritage.org.uk/learn/story-of-england/victorian/commerce/](http://www.english-heritage.org.uk/learn/story-of-england/victorian/commerce/)

# Reflections of Her

KAITLYN KUI



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*WRITER'S COMMENT: There was always this strange connection between my grandma and me. She could barely share her thoughts in English or Cantonese, yet she seemed to always know what to say to me with her gestures and her tone. Through my UWP 101 class, Dr. Gregory Miller offered me the opportunity to dive into that connection, seeking to bridge layers of my family history alongside larger social constructs. As I learned about her journey, I marveled at the kind of woman she was. She has shown me the value of resilience in the face of adversity, never allowing her circumstances to define her. Above all, in sharing her story, I hope others learn of the unmistakable power in the silence of the deeds that go unheard.*

*INSTRUCTOR'S COMMENT: Inspired by Pam Demory, my recently retired colleague, I assigned a version of her family history essay, which asks students to write about a family member's story in relation to a larger social context such as class, culture, race, gender, immigration, education, and/or politics. Kaitlyn was a standout student from the beginning of our Zoom-restricted quarter, but even so I was surprised—and certainly delighted—by how much context this seemingly modest essay manages to impart. Taking us across decades and from China and Hong Kong to Australia and the United States, Kaitlyn tells the story of her “pau pau” (grandmother) and, by extension, of three generations of remarkable women. Kaitlyn's subtle accretion of detail and event opens up the world of this resilient pastry shop proprietor. Late in the essay, we learn that her grandmother encouraged her daughter (Kaitlyn's mother) to enter a competition, which ultimately led to a college degree in fashion design. Kaitlyn has had her own academic successes here at UC Davis, where she is in her fourth year pursuing a major in*

*pharmaceutical chemistry. Her accomplishments are not surprising, given the nine-year-old Kaitlyn’s self-portrait with her grandmother, a painting that plays an important role in this very moving essay.*

—Gregory Miller, *University Writing Program*

Wrapped in brown paper and propped up near my bedroom was a painting of her and me. The topic that year for the Reflections program, an annual national art competition, was “Beauty Is . . .” My mom suggested, “Think about some people or events in your life that you find beautiful.” While I only got to see my grandma for a few weeks every other summer, I could envision her. I would hold her arm as we walked to the park and look up at her—the way the light would reveal the shades of gray in my Pau Pau’s hair. As she sat by me on the park bench, her favorite maroon knit adorning her head, she looked to me with her warm, affectionate smile and wrapped her arm carefully over my shoulder. A kindness that could not go unnoticed, yet there was something more. Even at eleven, awkwardly smiling while I sat next to my grandma: what had I yet to recognize?

\* \* \*

Lau Soon Wah was born on December 8, 1930, in Chaoshan, a linguistically and geographically distinct region in the northeastern Guangdong Province of China. Her childhood was consumed by the ongoing Chinese Civil War between the nationalists led by Chiang Kai-Shek and the communists led by



*My nine-year-old painting,  
“Summer with my Grandma.”*



*Pau Pau and eleven-year-old  
me at the park*

Mao Zedong. When the nationalists took control, corruption roamed free. Tax collectors were commonly reported by people as “blood-sucking devils” while the suffering of the peasants was ignored (Constitutional Rights Foundation).

Poor families, like my Pau Pau’s, rarely spent the little money they had for fear that others in the village would steal from them or report their spendings to the tax collectors. At a young age, my grandma was forced to quit school and thrust into household duties while her two older brothers continued their education. Food was scarce, and for every meal, her entire family of eleven would share one plate of rice and whatever morsels were available to eat.

By sixteen, she had an arranged marriage to a man she was fond of and sent to live with her in-laws, cold and calculating people. The next year, she gave birth to a daughter and, upon seeing a girl, her in-laws shoved her cold porridge to eat afterward. To them, the birth of a girl was unworthy of any praise—a grandchild who could not carry on the family name or support their family after being married off. My grandma felt alone. She was angry toward their sentiment and tried to shield this from her own daughter, treating her with utmost care.

At eighteen, her husband went to Vietnam in hopes of finding better business prospects; however, he was never to be seen again. What she had not known was that her husband had emphysema and a chronic heart condition. Her in-laws hid this fact from my grandma and hoped their wedding would serve as *Cung Hei*, a marriage to a terminally ill patient in hopes the joyous occasion would treat the disease. After their son’s death, her in-laws no longer needed her in the house, kicking her and her daughter out with only the clothes they wore and a picture of her husband. She would not allow them to look down on her for having a daughter and sought to make something more of herself.

\* \* \*

By 1949, the Chinese Civil War had ended and the Communist Party of China had emerged victorious. Mainland China became established as the People’s Republic of China, with Mao Zedong leading the single-party state focused on the suppression of individual rights and freedoms (Ghosh). The Guangdong province was marginalized by the new Chinese government, compromising its historical commercial prominence and heavily limiting its trade (Johnson 125). Contrastingly, Mainland China was beginning to divert business and entrepreneurs to the relatively safe and more stable British colonial port of Hong Kong (Schenk).

Due to a growing fear in communist rule, my grandma's father was driven to escape. Finding a more stable source of income as a silk trader and herbalist in Hong Kong, my Pau Pau and her daughter went along with him. She could not speak Cantonese or English, the two predominant languages in Hong Kong. This gave native Hongkongers more reason to see her as inferior, since mainlanders at the time were treated as "outsiders." Instead of allowing her circumstances to discourage her, she sought out opportunities to educate herself and earn a living. While she tirelessly practiced learning Cantonese, she found herself more interested in forming social bonds through other methods.

By 1961, after attending vocational classes in dressmaking, my grandma was granted a certificate in sewing apparel. She had managed to make friends with Teochew speakers and other members of her dressmaking classes. A few years later, she met my Gong Gong. While he was blunt and headstrong, she saw my grandpa for who was—an honest and hardworking man. With my Gong Gong, she had two daughters: my Yee Ma and my mom. Now my grandma had to care for three girls and an elderly man, the in-law of my grandpa's previous marriage. My Pau Pau was adamant about finding ways to make money. While my grandpa was gone for months at a time as a seaman on a cargo ship, my Pau Pau looked into ways her skills could be used.

In the 1960s, Hong Kong was on the rise as one of the Four Asian Tigers, a high-growth economy in East Asia powered by exports and rapid industrialization (Bloomenthal). The textile and manufacturing industries were especially prominent at the time. My grandma would bring home clothing consignments every day from garment factories so she could care for her children and not have to face Hongkongers' scorn toward mainlanders. At a young age, my mother and her sister remember helping their mother cut overlocking threads and going to bed to the whirring of their mother's sewing machine. She also found work piecing together plastic flower molds, as artificial flowers made from plastic were in high demand by the West (Lo). Food was always a pressing issue, and at times she would go to nearby restaurants and pay small amounts for their scraps. Her tireless efforts and frugal budgeting proved to be extremely effective. Within a couple years, she saved 1000 HKD, a considerable amount of money at the time. With her and my grandpa's savings, their family sought to leave Hong Kong.

\* \* \*

During the early 1960s to early 1970s, Australia was undergoing a series of changes. By 1974, The Immigration Restriction Act 1901, an openly racist policy designed to deter non-White immigrants, was abandoned. Nonetheless, the Migration Act of 1958 was still present and actively sought to give immigration officials discretion in choosing who would be accepted to enter Australia (Gao 105).

With sponsorship from Grandpa's stepson, Uncle Tony, my grandpa, my grandma, and their two daughters were able to immigrate to Australia. Those left behind included my Pau Pau's eldest daughter, who had gotten married in Hong Kong, and my Gong Gong's in-law, who had passed away before they could make the journey. Since my grandparents could not afford to buy their own home, they had to live with Uncle Tony's family. Feeling obligated to help, my Pau Pau would care for Uncle Tony's three young daughters while the rest of the family, including my mom and my Yee Ma on weekends, would work at Uncle Tony's restaurant.

In order to not be burdensome, my Pau Pau sought to buy her own food for her daughters and husband. One day, my grandmother brazenly chose to ride the bus all the way to the city in order to buy groceries. As the sun went down, my mother and my Yee Ma waited at the bus stop, fearfully crying. "*Will she ever find her way back home?*" my ten-year-old mother thought. Only when the last bus arrived were they relieved to see their mother carrying two big bags full of food.

\* \* \*

By 1975, a flood of Vietnamese refugees arrived in Australia due to the aftermath of the Vietnam War (Phillips and Spinks). With them brought a vast array of knowledge. While my grandma would try to communicate with them, her genuinely kind-hearted personality was what shone through to others. The friends she made would teach her how to make a variety of foods, including my grandma's well-known pastry, the dau saa bang, also known as mung bean mooncakes. Unlike the traditional soft and crumbly dau saa bang, what made hers special was the crispy, flakey texture she strived for. With my grandma's love of cooking and the accumulated knowledge from her friendships, she set out toward a new dream.

Many immigrants who arrived in Australia had little money. With some of the Vietnamese friends she trusted, they would microfinance among themselves, as banks would not loan money to individuals

with no credit. A head person would offer a lump sum of money for the month, and every individual would write down a number with the interest rate they'd be willing to pay. The highest bidder would get the money and have to pay off the loan with interest regularly (Kagan). While this financial business had its risks, my grandma was always cautious, yet compassionate. She would bring on others who needed help with paying for medical expenses or needing some extra money to buy a home. Even then, any money she earned in the process would sometimes be lent to others. The money would also be used toward her love of cooking for others. No matter where she was, my Pau Pau would offer her baked goods to her close acquaintances, whether it be her local butcher or the kind civilian willing to drive her home from the bus stop.

My grandpa despised her generous money lending habits, often leading to quarrels in the household. The times when the money she lent would not be honored, my grandpa, being someone who worked tirelessly at the restaurant cooking and coming home to peel garlics to sell, would feel this as a huge financial burden.

Nevertheless, had it not been for my grandma's magnanimity, she would not have been able to open her pastry shop. Her bakery brought the family together so my Gong Gong could stop working at my Uncle Tony's restaurant. My mother would help on the weekends, learning all sorts of recipes from her mother in the process.

As the bakery was thriving, my mother decided to enter a national fashion designing competition. The theme was "What inspires you as



*My Pau Pau standing outside of her  
pastry shop*

an Australian?" As an immigrant, she thought about her family's journey and the awe she felt arriving in a new country. With those thoughts in mind, her design became a finalist in both garment and fabric printing for Western Australia. The pride in her mother's eyes was apparent in the warm, wet stains on my mother's dress as she hugged her tightly. However, had it not been for my Pau Pau's encouragement, she would not have been there. My mother had not done as well as she would have

liked on her college entrance exams, and my grandma sat her down and asked in Chiu Chou, “What are you passionate about?” When my mom had first arrived in Australia, the principal of her elementary school exasperatedly remarked, “You can’t read, you can’t write—what can you do?” Grabbing a piece of paper, my mother drew a beautifully designed interior of a home that left him stunned. While she may not have been the smartest academically, design was her passion. With support from her mother, my mom decided to enroll in fashion design.

\* \* \*

Every summer I had the chance to visit my Pau Pau, the memories we made were simple yet unforgettable. We would stay at my grandparent’s home and make dau saa bang in her backyard shed. A celebration of being together as one.

By 2011, my Pau Pau was unable to cook the large meals or create our celebratory dau saa bang. The love she had for cooking seemed to fade, dementia raging away at her brain. My mother had ushered me to hold her hand, giving me the photocopy of my artwork I had done two years ago. As my eleven-year-old self held my grandma’s hand, I showed her the painting, saying, “This is the painting of us. I won the competition for California that year!” She would close her eyes and nod—a gesture the eleven-year-old me interpreted as her sign of understanding. Unbeknownst to me, this would be the last time I would get to speak with her.

On July 11, 2011, she fell asleep and peacefully left. My mother had told me, the night before, my Pau Pau had gone to the kitchen to check if the stove and appliances were turned off. Being a light sleeper, my mother awoke to the sound of her walker scratching the floor. Half awake, my mother bluntly said in Chiu Chou, “You’re gonna wake up everyone in the house with your noise!” Just as she said that, my grandma promptly lifts her walker and quietly walks back to her room. I think about this moment, a woman putting others before herself, regardless of her condition. A woman who waited a whole year for us to come back to see her off.

As I walked up to her casket, there was the picture of my watercolor artwork in her hand. My mother had brought the photo with her to leave in my Pau Pau’s arms. At nine, I couldn’t grasp the gravity of my painting, her beauty, kindness and occasional inflexibility were the only traits I knew. At twenty-one, I have a deeper understanding of what she

meant to me—what she meant to the world. She was a woman who was deeply loving and generous, all while being able to adapt and stubbornly strive to attain the best out of the life she was given. Above all, she is the woman I seek to become. In her life, she met many obstacles, yet she found strength from those situations. She's taught me the importance of persistence and perseverance—action and endurance. Even through my failures and setbacks, I choose to see opportunity in every situation. To find my worth. I stare at the painting, dusted off and in the corner of my room. There she is, reflecting back at me.



## Works Cited

- Bloomenthal, Andrew. "Four Asian Tigers Definition." *Investopedia*, 4 Mar. 2021, [www.investopedia.com/terms/f/four-asian-tigers.asp](http://www.investopedia.com/terms/f/four-asian-tigers.asp)
- Constitutional Rights Foundation. "Why Did the Communists Win the Chinese Revolution?" 2016, [www.crf-usa.org/images/t2t/pdf/WhyDidCommunistsWinChineseRevolution.pdf](http://www.crf-usa.org/images/t2t/pdf/WhyDidCommunistsWinChineseRevolution.pdf)
- Ellis, James W. "Hong Kong's Elusive Identity: Searching in the Past, Present, and Future." *Asian Culture and History*, vol. 10, no. 2, 2018, p. 90. [doi.org/10.5539/ach.v10n2p90](https://doi.org/10.5539/ach.v10n2p90)
- Gao, Jia. "Politics of a Different Kind: Chinese in Immigration Litigation in the Post White Australia Era." *Cosmopolitan Civil Societies: An Interdisciplinary Journal*, vol. 3, no. 1, 2011, pp. 103–120. [doi.org/10.5130/ccs.v3i1.1786](https://doi.org/10.5130/ccs.v3i1.1786)
- Ghosh, Iman. "The People's Republic of China: 70 Years of Economic History." *Visual Capitalist*, 12 Oct. 2019. [www.visualcapitalist.com/china-economic-growth-history/](http://www.visualcapitalist.com/china-economic-growth-history/)
- Johnson, Graham E. "50 Years On, 20 Years On: Revolution and Reform in Guangdong." *Asian Geographer*, vol. 21, no. 1–2, 2002, pp. 125–144. [doi.org/10.1080/10225706.2002.9684089](https://doi.org/10.1080/10225706.2002.9684089)
- Kagan, Julia. "Microfinance Definition." *Investopedia*, 28 Aug. 2020, [www.investopedia.com/terms/m/microfinance.asp](http://www.investopedia.com/terms/m/microfinance.asp)
- Lo, York. "The Forgotten Jewish American Tycoons behind the HK Plastic Flowers Industry." *The Industrial History of Hong Kong Group*, 18 Dec. 2017, [industrialhistoryhk.org/the-forgotten-jewish-american-tycoons-behind-the-hk-plastic-flowers-industry/](http://industrialhistoryhk.org/the-forgotten-jewish-american-tycoons-behind-the-hk-plastic-flowers-industry/)
- Phillips, Janet, and Harriet Spinks. "Boat Arrivals in Australia since 1976." *Parliament of Australia*, Commonwealth of Australia, 23 July 2013, [www.aph.gov.au/about\\_parliament/parliamentary\\_departments/parliamentary\\_library/pubs/bn/2012-2013/boatarrivals](http://www.aph.gov.au/about_parliament/parliamentary_departments/parliamentary_library/pubs/bn/2012-2013/boatarrivals)
- Schenk, Catherine R. "Economic History of Hong Kong." Edited by Robert Whaples. *EH.Net Encyclopedia*, Economic History Association, 16 Mar., 2008, [eh.net/encyclopedia/economic-history-of-hong-kong/](http://eh.net/encyclopedia/economic-history-of-hong-kong/)

## It's All In The Wrist

CAITLYN ORTIZ



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*WRITER'S COMMENT: When I was assigned the case study essay for UWP 101F, I wanted to learn and write about something new to me. I was struggling to find someone to interview when I was reminded about my best friend's carpal tunnel syndrome (CTS), which she was diagnosed with as a teenager. I was incredibly hesitant, as I could not see how I would learn anything from such a common condition. After conducting some research, I realized how few articles are dedicated to adolescents with CTS. Even though I was supposed to write about someone I did not know, I took her offer and learned so much more than I could have imagined. From this paper, I gained a much deeper understanding about how a common adult ailment shaped the life of my best friend. This assignment allowed me to learn about the frustrations she faced while trying to convince physicians about early onset CTS. Her situation motivated me to tell her story and emphasize the importance of early prevention and treatment.*

*INSTRUCTOR'S COMMENT: In my Health Sciences Writing class, students spend the majority of the term writing for scientific audiences. At the end, though, they turn their attention to communicating with a lay audience in their case study. Most students find this immensely challenging, both because they're having to appeal to an audience different from themselves and because of the different techniques narratives demand. Caitlyn's essay is both emotional and informative. A condition many dismiss as an irritation to office and factory workers becomes a powerful force that changes a young woman's path in Caitlyn's capable, thoughtful hands.*

*—Karma Waltonen, University Writing Program*

When pain shot up her right wrist and spread into her palm, with spidery legs extending into her fingers, she knew something was wrong. Cherise had joined her high school's tennis team as a freshman with the hopes of becoming a key player on the varsity team. She spent her entire sophomore year taking extra lessons and improving her tennis skills. Right before tryouts, she started feeling pain in her right wrist. With every swing, the pain would flare into her right palm and sometimes cause her to drop her racket. Her family has a history of carpal tunnel syndrome, but she shrugged the idea off. She was only sixteen, and no high schooler she knew had a health condition like that. She kept playing and eventually made it onto the varsity team. With a more rigorous training schedule, her wrist hurt more than ever, but she couldn't let her coach, team, or herself down. She had made it this far, but within a few months, her pain became so unbearable she couldn't hold her racket. At only sixteen, Cherise was diagnosed with carpal tunnel syndrome and was forced to reimagine her goals.

### **What Is Carpal Tunnel Syndrome:**

Cherise didn't want to believe she had the same ailment as her parents, but she quickly understood she would have to accept it. In an article in *Pain Practice*, written by physicians in departments related to anesthesiology and pain management at various universities in the Netherlands and the United States, Jacob Patijn and colleagues describe carpal tunnel syndrome (CTS) as a "neurological disorder" that affects the functionality of the median nerve running through the carpal tunnel in the wrist (Patijn et al., 2011, p. 297). The carpal tunnel is a small space created between the wrist bones and a ligament. It guides muscle tendons and the median nerve through the wrist to provide the hand with sensation and muscular function. Since there is limited space, the median nerve can become compressed by the ligament on top or by the neighboring tissues and tendons (p. 298). One might experience pain, numbness, or tingling sensations in the forearm, wrist, hand, and fingers, specifically the inside of the thumbs, index, middle, and half of the ring fingers (pp. 297–298). This usually occurs in the dominant hand, but it can occur in both (p. 298).

Throughout her sophomore year, after completing school assignments or tennis practice, Cherise started to feel these symptoms. To alleviate the pain, she would constantly shake her wrist until the

discomfort subsided. This action is referred to as the “flick sign” by physicians Jennifer Wipperman and Kyle Goerl (2016) at the University of Kansas School of Medicine. It is the best indicator to identify CTS (p. 993). Without knowing this, Cherise remained in denial about having CTS and continued to shake her wrist constantly. Besides the flick sign, providers also measure wrist ratios and test patients for nerve compression, muscle weakness, and sensory loss to effectively diagnose patients with CTS (p. 995).

Diagnosis and treatment of CTS depends on the level of disruption of daily activities and sleep (Patijn et al., 2011, p. 300). Mild cases of CTS might disrupt tasks that require bending the wrist and hand (Wipperman & Goerl, 2016, p. 993). After writing a timed essay for her class, Cherise’s wrist would flare up and worsen throughout her day. Her fingers started to tingle and eventually became numb. This is common among mild cases because the median nerve’s sensory fibers are more likely to become compressed than the motor fibers. As CTS worsens, the motor fibers become impaired, affecting thumb functionality (p. 993). Cherise would lose her ability to grip objects, like a pencil or a tennis racket, making her school tasks and team drills impossible. During practice, she tried to ignore the symptoms, but she often had to ask to sit out to prevent further pain. She was the only one on her team with any wrist pain, so her coach didn’t understand why she couldn’t do the drills like everyone else, sometimes asking her, “Can’t you do it for your team?” Even though she had all the signs and symptoms of severe CTS, no one else her age had it. Cherise felt isolated.

### **Who Is Affected:**

Cherise is among the few affected by CTS at such a young age. According to *MedlinePlus* (2020), a website organized by the United States National Library of Medicine, CTS usually starts in adults ages forty to sixty, affecting less than 5 percent of all adults. This condition is the most common form of nerve compression found in adults (Davis & Vedanarayanan, 2014, p. 59). CTS has a wide variety of causes, although it mainly stems from occupations requiring manual labor (p. 57). The frequent and repetitive use of vibrational tools and force can strain people’s wrists and worsen their symptoms (Wipperman & Goerl, 2016, p. 993). Having small wrists, inflamed ligaments, fluid buildup, obstructions, hormonal flare-ups, and increased stress to the wrist can

all further the development of CST. In addition, pre-existing conditions, like obesity, pregnancy, hypothyroidism, arthritis, and diabetes, can indirectly cause CTS (p. 993).

CTS is more common in adults, but it can still affect younger populations (MedlinePlus, 2020). Among children, CTS is rarer and stems from slightly different causes (Davis & Vedanarayanan, 2014, p. 57). Kids often get CTS from injury or pre-existing conditions, including diabetes, obesity, and nerve damage. Similar to Cherise, some kids also develop CTS symptoms after writing for school assignments (p. 58). CTS could also act as “part of a genetic syndrome,” but inheritance is uncommon (MedlinePlus, 2020). Cherise thinks her CTS was passed down because her parents and older sister all needed surgery in at least one wrist. Though this theory is highly probable, none of her family members experienced symptoms as early as she did.

### **Treatments and Beyond:**

Depending on the severity of the CTS, providers offer different treatment plans. Mild CTS, characterized by few noticeable limitations, is usually treated with a splint, anti-inflammatories, or physical therapy (Patijn et al., 2011, p. 300). After Cherise had consistent symptoms for awhile, she visited her primary care physician at the end of her sophomore year. She explained how she couldn't hold her tennis racket from the amount of pain she felt. Despite this, she struggled to convince him she had CTS, due to her age. Although her symptoms directly pointed to CTS, he insisted she was “too young” because it “happens later in life.” Cherise was sent home with a brace and expectations to get better. Even though she had severe symptoms, Cherise's doctor hesitantly put her on what Patijn et al. (2011) describes as a “conservative management” treatment plan used for mild cases (p. 299). The treatment plan categories are intended to reduce the risk of taking unnecessary drastic measures that could potentially harm the patient. In Cherise's case, however, her provider dismissed her symptoms because of her age.

As she expected, her symptoms worsened. During her follow-up appointment, her primary care physician still did not diagnose her with CTS and instead referred her to sports medicine. Without a diagnosis and with another referral, Cherise was then sent to an orthopedic physician. He officially diagnosed her with CTS, but he was still hesitant to treat her as a severe CTS patient. She was given a corticosteroid injection and told to wait a month for the results. These injections are usually given when

the milder treatments do not work (Patijn et al., 2011, p. 299). This shot is intended to postpone “the need for surgery” because it is supposed to provide effective relief against the compressed nerve (Wipperman & Goerl, 2016, p. 997). Cherise’s pain, however, did not go away.

After this period of trial and error, Cherise finally received a referral to see the orthopedic surgeon who operated on her dad’s wrist. Cherise reviewed her symptoms, and he immediately scheduled her for the next surgery slot six months from then. Although she felt relieved to finally have acknowledgement of her CTS, she knew she would suffer with worsening symptoms for a little longer.

A year after her first appointment, Cherise got surgery. They told her surgery was the final option for CTS patients because of its high risk for permanent nerve damage. Typically referred to as “carpal tunnel decompression,” the procedure has a “70 to 90 percent” success rate and is reserved for those with “severe median nerve damage” (Wipperman & Goerl, 2016, p. 998). The website organized by the American Association of Neurological Surgeons explains how this surgery, either open or endoscopic, cuts the ligament over the carpal tunnel and relieves compression on the median nerve (AANS, 2021).

Like most patients, Cherise took about a month and a half to recover and returned to school that fall to complete senior year like a normal, healthy teenager. Within a few months, however, pain started to creep out of her wrist again. She took all the necessary precautions, but her symptoms mildly returned in the same place. According to the AANS, recurrent CTS happens in “less than five percent of patients” after surgery (AANS, 2021). Her returned symptoms could be from her delay in proper categorization and treatment. Since Cherise had severe CTS, she was at risk for not completely recovering after her surgery (Wipperman & Goerl, 2016, p. 995). Cherise knew there was not much she could do, so she continued to wear her brace and tried to live like others her age.

She reflects back and wishes the timing for everything had been different, but she has since accepted her fate of having CTS at a young age. Since high school, she had to change her lifestyle and daily habits to ensure she protects her wrist as much as possible. Instead of becoming a starter on the tennis team, Cherise became the “morale booster” and sat among the crowd during matches. As she watched her teammates play, her coach would yell, “it’s all in the wrist.” Cherise would agree but for a completely different reason.

## References

- American Association of Neurological Surgeons (AANS). (2021, August 20). *Carpal Tunnel Syndrome—Symptoms, Causes, Diagnosis and Treatments*. [www.aans.org/Patients/Neurosurgical-Conditions-and-Treatments/Carpal-Tunnel-Syndrome](http://www.aans.org/Patients/Neurosurgical-Conditions-and-Treatments/Carpal-Tunnel-Syndrome)
- Davis, L., & Vedanarayanan, V. V. (2014). Carpal Tunnel Syndrome in Children.” *Pediatric Neurology*, *50*(1), 57–59. doi.org/10.1016/j.pediatrneurol.2013.08.019
- Lewis, C., Personal interview, Mar. 9, 2021.
- MedlinePlus. (2020, August 18) *Carpal Tunnel Syndrome*. [medlineplus.gov/genetics/condition/carpal-tunnel-syndrome/](https://medlineplus.gov/genetics/condition/carpal-tunnel-syndrome/)
- Patijn, J., Vallejo, R., Janssen, M., Huygen, F., Lataster, A., van Kleef, M., & Mekhail, N. (2011). Carpal Tunnel Syndrome. *PAIN Practice*, *11*(3), 297–301. doi.org/10.1111/j.1533-2500.2011.00457.x
- Wipperman, J, & Goerl, K. (2016). Carpal Tunnel Syndrome: Diagnosis and Management. *American Family Physician*, *94*(12), 993–999. [www.aafp.org/afp/2016/1215/p993.pdf](http://www.aafp.org/afp/2016/1215/p993.pdf)

## Hideous Green Knights Sleep Monstrously: A Night of Debate in Davis

ELI ELSTER



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*WRITER'S COMMENT: The essay has not always been so ubiquitous as it is today—in ages past, the dialogue was an equally valid form. Where the essayist binds their diverse thoughts to a single mind, the dialogist speaks through many voices, each bearing a separate viewpoint; so when Professor Vernon invited us, for our final paper, to write something other than an essay, I jumped at the chance to use this form, one well suited for the discord and volatility of literary criticism. Having been asked to make a “critical intervention” into a term discussed in our Medieval Literature class, I chose “monstrosity” and filtered it through Sir Gawain and the Green Knight. It has lots to say on that deeply interesting word. Professor Vernon himself, alongside Amanda Hawkins, my wonderful TA, joins a cohort of imagined critics to discuss whether the eponymous “Green Knight” is, in fact, a monster. This is the first dialogue I’ve written for a class, and I enjoyed the process immensely—I don’t think it will be my last.*

*INSTRUCTOR'S COMMENT: Creativity as a function of risk-taking is difficult to encourage in my students at the best of times. There is too much at stake to stray from the familiar: a perfect GPA, admission to law school, all the things that just make paradigm stretching seem like a too-costly luxury. Occasionally I can encourage a student to take a chance and trust themselves to make something ambitious, but that involves building a rapport that I was not able to do this year. This is all to say that what follows is not only a work of critical thinking that synthesizes a variety of medieval texts in a form that demonstrates a deep understanding of argumentation and engagement with difficult*

*Hideous Green Knights Sleep Monstrously*

*material, it is wholly a product of Eli's willingness to be creative in that underappreciated sense of the word. He has taken a broad set of arguments about 1000 years' worth of material and put them into action that does not strive for completeness, but rather entertains the richness of a dialectical method. What follows is bold, clever, smart, and above all, brave.*

—Matthew Vernon, Department of English

**Scene:** *The Monster Society for Monsters has gathered in the Theater. As they wait for the evening's talk to begin, members wander between their seats, debating various questions of strength and chivalry. One asks whether Hippocrates' daughter, being both damsel and dragon, is therefore stronger than normal dragons; another laments Heaney's failure to write a worthy prequel for Grendel. On stage sit Art and Ginny, the leaders of the executive board, alongside Dr. K, a guest speaker. Art raps his gavel. The chatter ceases; the lights dim; and a spotlight array flickers on, dressing the stage in a nauseous mix of green and gold.*

Art: Thank you. On this evening of June the 10th, the Monster Society for Monsters is pleased to welcome Dr. K, head of the Monstrous Center for Monstrosities at UC Davis. He is here, by popular request, to discuss an atypical but no less monstrous beast: the Green Knight, that worthy challenge to Sir Gawain. (*The crowd murmurs.*) While the Green Knight is not the most monstrous of monsters, he is, nonetheless, a monster. Dr. K is here to explain just how that is the cas—

*A door slams open at the back of the auditorium. Professors Vernon and Hawkins stride into the room. On each of their left hips sits a large battle axe; on their right, a sprig of holly. The axes scrape against the floor, leaving long, green trails in the carpet. Those in the aisle seats scramble back and look toward Art, who cannot seem to find his gavel.*

Art: And just who—

Hawkins: Stop! (*She reaches the stage and levels her axe at Dr. K.*) You will stop, or you will *be* stopped!

Dr. K: (*huddling into his collar.*) You won't, you wouldn't, I didn't!

Vernon: (*walking up the steps.*) No. You will not. You will NOT! (*He turns to the crowd.*) There are many, many monsters for you, good people, to discuss. (*He sniffs his holly and begins pacing along the stage. Hawkins continues to glare at Dr. K.*) But the Green Knight (*he stops*) is not a monster.

Ginny: But, sir! (*Vernon turns. Ginny does not waver.*) He is a giant, and warlike, and . . . and green! You mean to tell me that *he*, that *thing*, is not a monster? Not monstrous? Not a monstrosity?

Hawkins: Exactly. And we're here tonight (*she replaces her axe and turns*) to prove it.

Art: (*dabbing his neck with a handkerchief.*) Well! (*He coughs.*) Well . . . if you will not leave, you may at least sit and cease your threats. A good debate is more than welcome. Isn't it, Dr. K!

Dr. K: Why—sure. But I am *certain* in my findings. The Green Knight is a monster. Nothing more, nothing less.

*Art unfolds two chairs for Vernon and Hawkins, who place their axes and holly carefully upon the stage and sit.*

Vernon: Certain? Hm. So let us hear it. Then will we strike a finishing blow, and be done with this nonsense and slander.

Dr. K: Fine. (*He begins pacing along the stage.*) Let us begin with a definition, so as to prevent any future confusion in terms. What, Professors, is a monster? I say it is a being that defies category—that is, one whose place within the world cannot be comfortably defined. Take Grendel, for instance. Would you agree that *he* is a monster?

Vernon: Yes.

Hawkins: Certainly.

Dr. K: And why, may I ask, is that so?

Hawkins: Because he lives in two worlds but belongs to neither. Consider the Heaney translation. He writes the following of Grendel: “he had dwelt for a time / in misery among the banished monsters / Cain's clan, whom the Creator had outlawed and condemned as

outcasts” (100–106). As an outcast from the Creator’s world, he must once have resided there—but his home was not replaced in exile. As Heaney says, he does not occupy the hinterlands comfortably. Instead, Grendel hangs along their borders, caught between the light and the dark without embodying either.

Dr. K: Precisely. And one might develop the point by noting those entities which we do *not* call monsters. Beowulf, despite his terrible strength and ferocity, is not a monster—for he epitomizes and represents his people. Nor are the enemy tribes; though they pose a great threat to the Geats, they still belong to their worlds. Monstrosity is not antagonism, then, but interstitiality. Do we agree upon this condition?

Vernon: For the sake of argument, yes. But generalization will be your doom. (*The crowd, both excited and cowed, draws back.*)

Dr. K: Humph. (*Hawkins chews on her holly.*) Let’s look at your man’s appearance. I quote, “When there hove into the hall a hideous figure / square-built and bulky, full-fleshed from neck to thigh / the heaviest horseman in the world, the tallest as well / his loins and limbs so large and so long / I think he may have been half-giant” (136–140). (*Scattered applause ensues.*) Just where does the Knight belong? At no point, I say, can the author tell how to describe him. He is called, firstly, a “hideous figure,” a creature discernible by little save his grotesquery. Only then does he venture at labels: “heaviest horseman,” a man exaggerated, and “half-giant,” a beast born lacking his full mutation.

Hawkins: We get it.

Dr. K: Bear with me, please, for the truth grows muddier. “Anyway,” writes the poet, “I can say he was the mightiest of men” (141). Dissatisfied by all three of his previous ventures—“hideous figure,” “heaviest horseman,” and “half-giant”—he tries again with the second, only to find himself defied by the strangest, most monstrous quality at all: “not only was this creature / colossal, he was bright green” (149–150). It is this factor that defies the minds of the court and High Table. Recall how “they gazed at him a long moment, amazed / Everyone wondered what it might mean / That a man and his mount could

both be coloured” (231–240). The Knight defies their imaginations. Adventures and glory did not prepare them for such sights. Clearly, the Green Knight defies category—and you’ll recall, I hope, your prior agreements.

Art: Let’s allow our “guests” to retort.

Vernon: Thank you. You’ve said—and I agree, once again—that a monster defies categories, living between without embodying. Yet while betweenness is, undoubtedly, a *necessary* condition of monstrosity, it is by no means sufficient, per your example, to make a monster. Something else comes into play—something obvious, I might add. (*Dr. K glowers at Vernon’s shoes.*) You mention Grendel as the monster *sine qua non*, on the basis of limbo. But what indicates that limbo to the reader? Why, his misery within his borderland, along with his discomfort outside it. Misery denotes his failure to belong. It is therefore an imperative for a proper monster; how can a being be said *not* to belong, unless he shows us the fact through feeling? Now tell me, Doctor, does the Green Knight seem miserable?

Dr. K: No, I suppose he doesn’t.

Vernon: In fact, he appears not only content, but glorious. He carries two worlds, the natural and knightly, through a “magnificent array” of traits and symbols described as “richly studded . . . delicate,” while his hair cleaves “to his neck like a king’s cape” (151–179). How can you call him monstrous? Is his betweenness not beautiful? Any rational man will see the difference between him and a wretched thing like Grendel—and I hope, Doctor, you will be rational.

Dr. K: Your point is a good one. But even if, as you say, the Green Knight is not monstrous in appearance, he is monstrous in his actions. Since you have proved—and I thank you for it—that betweenness is necessary but not sufficient, I will introduce another related condition: monsters disrupt the “proper” category, in this case King Arthur’s court. The tale begins with a feast attended by *all* the finest knights and ladies—headed, of course, by Arthur, of whom “men say . . . was the greatest in courtesy” (26). Beside him sits Guinevere, “no woman lovelier” (81). What, my friends, do we observe in this great hall? Nought but the fullness of strength, virtue, and, above all else, chivalry.

*Hideous Green Knights Sleep Monstrously*

Arthur and his court epitomize that final quality—in disrupting their court, then, the Green Knight disrupts the chivalric category as a whole.

Hawkins: Professor, you cannot possib—

Dr. K: Please! Allow me to finish. (*Ginny blushes at his severity.*) Note also the *degree* of his disruption. He moves beneath a chivalric guise, issuing a challenge that *appears* brave and sporting but, in reality, has a guaranteed outcome—since he cannot, as we see, die and therefore lose. Yet Gawain, being *truly* chivalric, must take on the quest. Thus the Green Knight assumes the skin of his target, before destroying it from the inside. Like a virus, he imitates and abuses the response of his host. I do not establish a new claim in saying so; rather, I mean to denote just how monstrous his actions are. Can we imagine a more disruptive act?

Hawkins: Hypocrisy.

Ginny: Hm?

Hawkins: He speaks of *faux* chivalry, while donning a false intelligence. (*Dr. K sputters.*) Once again, he speaks pure nonsense—(*to Vernon*) may I? (*Vernon strikes his axe into the floor.*) Let's start with your first claim. You think that disrupting the “proper” world is monstrous; I invoke David Hume in a response. One cannot deduce a moral principle from empirical facts. (*The crowd oohs and aahs.*) Yes, the Green Knight disturbs the court. But you're harboring a bias, Doctor, derived from the Knight's appearance. So perhaps we can work by analogue, to prevent any confusion. As an “expert” on the topic, you'll recall *The Turke and Sir Gawain*. Correct?

Dr. K: Correct.

Hawkins: He intrudes and issues the same challenge—a blow for a blow. And yet, he strikes the reader as homely, at most, but not monstrous.

Dr. K: But *he* does not speak from his own severed head! *He* does not survive decapitation!

Hawkins: Are you sure? The text isn't. Remaining translations leave out the space between Gawain's blow and his journey—we know, however,

that the Turke survives the strike and speaks immediately after. Your analysis slips beneath blood and gore when, in principle, the stories match exactly. And as the great Vernon ascertained, appearance does not make a monster. Neither, it seems, does disruption.

Dr. K: (*clearly befuddled.*) Well, fine! Then they're *both* monsters. They attack King Arthur's court, the great star of chivalry! An attack on the court is an attack on knightliness and the moral good—therefore, it is monstrous.

Hawkins: Hume's principle, once again. But there's an easier way to prove you wrong. Is the court perfect, Doctor? Is it infinitely moral? Is King Arthur a deity, or a man?

Dr. K: I—

Hawkins: Why, then, must Gawain, the only knight willing to take on the challenge, admit finally his “covetousness and cowardice . . . succumbing to deceit?” (2509). If the court's finest is not quite perfect—if time to improve remains—then the court *itself* is imperfect. Hence why, amidst the revelry, King Arthur is said to speak of “courtly trifles” (108). We can argue whether the challenge is fair or worthwhile—but we cannot do so based on a false sense of perfection. If monsters live only to confront the faultless, then neither the Green Knight nor the Turke is a monster.

*Dr. K is speechless. Art and Ginny stare blankly toward the balconies. Replacing his axe and holly, Vernon stalks down the stage; Hawkins waits for a moment, then follows. The at-first reticent crowd now moves toward them, hoping to know the great purveyors of truth. Suddenly, Ginny rises.*

Ginny: Professors! (*Vernon and Hawkins stop but do not turn around.*) If the Green Knight isn't the monster, then . . . who is?

Vernon: Must there always be a monster? Our point tonight was not to argue someone *else's* monstrosity, but to defend our Knight from the claim. Your generalizations, though they may apply to Grendel and others, do not apply to *him*. (*He motions to the crowd.*) I leave you all with a warning, wrought first by Gustave Flaubert. A monstrosity, he said, is something outside of nature, a thing that lives in the extremes

## *Hideous Green Knights Sleep Monstrously*

(Sartre 97). Whether he was correct in this estimation is worth debating—but ask yourselves a simple question. Does King Arthur’s court live naturally, like the Green Knight? Or might we see their donning of the “band of green” (2517) as an attempt to move *closer* to his state—that is, to become more *like* the supposed monster? And let me say one thing more. Monstrosity—much like the monsters themselves—is unstable and indefinite. It is sometimes useful to generalize; but a good reader is wary of overzealous analysis, and is prepared to accept the terms laid out by a narrative without bringing to it preconceived notions or systems. Hesitate, I ask you, next time your instincts demand a label. Consider whether that label is, in fact, the right one—and remember that the text knows better than you.

*Hawkins breaks the door with a blow from her axe. Holly leaves drift in their wake as they leave the auditorium. The lights go up. The crowd turns to find three empty chairs onstage.*

## Works Cited

- Armitage, Simon. *Sir Gawain and the Green Knight*. W. W. Norton & Company, Inc., 2021.
- Hahn, Thomas, editors. *The Turke and Sir Gawain. Sir Gawain: Eleven Romances and Tales*, Medieval Institute Publications, 1995. Retrieved from [d.lib.rochester.edu/teams/text/hahn-sir-gawain-turke-and-sir-gawain](http://d.lib.rochester.edu/teams/text/hahn-sir-gawain-turke-and-sir-gawain)
- Sartre, Jean-Paul. *The Family Idiot: Gustave Flaubert*. The University of Chicago Press, 1987.

# “Our Ancestors Have Gone Through This Before”: COVID-19 and It's Disproportionate Consequences in Indigenous Communities



ANNALIESE DIVNEY

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*WRITER'S COMMENT: For this assignment, I wrote about the impact of COVID-19 among Indigenous communities. The prompt was extremely open-ended, which intimidated me at first. I am extremely passionate about environmental justice, which is intrinsically related to Indigenous rights, Land Back, and decolonization. Related to this topic, of course, is public health among Indigenous communities, as it forms a feedback loop with environmental conditions, each affecting the other through countless interconnected pathways. While writing this article, I had the honor of interviewing many inspiring community leaders. I learned about the consequences of the pandemic that are not at the forefront of the general public's consciousness and are typically not even considered by public health specialists or academics, such as the pandemic's threat to culture and language. Listening to and amplifying the experiences of Indigenous people is crucial to understanding long term socioeconomic and cultural effects of the pandemic, and to documenting and demonstrating the ways in which inequities and systemic discrimination compound and intensify, especially during times of crisis.*

*INSTRUCTOR'S COMMENT: Annaliese Divney's extraordinary exploration of the ways in which Covid has impacted Native American communities drew me in as soon as I started reading it. She found powerful data, and, at least as important, powerful stories. Annaliese has what I can*

*“Our Ancestors Have Gone Through This Before”*

*only call an instinct for story-telling, knowing how to pace her work, how to intrigue her readers, and, perhaps above all, how to tell a hard hitting story in a way that, ultimately, is empowering. I'm delighted that Prized Writing has recognized her work, and I am sure it is only the first of many, many published works that Annaliese shall put out into the world in the years to come. Hers is a powerful voice . . .*

—*Sasha Abramsky, University Writing Program*

Christina Thomas speaks in an earnest and somber tone, reflecting on the knowledge and experiences of the many generations of Northern Paiute, Western Shoshone, and Hopi that shape the branches of her family tree. About the COVID-19 pandemic, she states in simple terms: “Our ancestors have gone through this before.”

Since the arrival of colonizers who carried with them an array of deadly diseases like smallpox, measles, and cholera, public health crises have disproportionately impacted Indigenous communities. The COVID-19 pandemic is no exception to this pattern.

Unequal distribution of public health consequences is caused by a multitude of underlying social and economic factors originating from systematic discrimination. Indigenous peoples fall into some of the most vulnerable categories when it comes to health. Compounding factors that augment Indigenous people’s vulnerability to infectious diseases include access to proper sanitation, clean water, quality healthcare, and healthy food sources. According to a paper published in the *Journal of Clinical Nursing*, these “social and health inequities [stem] from invasion and subsequent colonization,” the legacy of which “includes intergenerational and concentrated poverty, poor physical and mental health, transport and housing issues, increased rates of domestic and family violence, shorter life expectancy, and inadequate access to culturally safe care” (Power et al., 2020). The United Nations (2020) found that American Indian and Alaska Native (AI/AN) populations have higher rates of communicable and noncommunicable diseases, higher mortality rates, and shorter life spans than their non-Indigenous counterparts. Health issues like heart and liver disease, hypertension, cancers, and diabetes are also more common among Indigenous peoples, according to information released by the International Indian Treaty Council (2020). All of these risk factors have come to a head during the COVID-19 pandemic. Recent

evidence suggests that average COVID-19 incidence rates are 3.5 times higher for AI/AN persons than non-Hispanic Whites and that death rates are higher for AI/AN persons as well (Yellow Horse & Huyser, 2021). Further, the CDC's Morbidity and Mortality Weekly Report (2020) found that AI/AN persons make up 0.7 percent of the U.S. population, yet are overrepresented in COVID-19 infection rates, as 1.3 percent of all COVID-19 cases reported to the CDC from January 22, 2020, to May 30, 2020, were among AI/AN persons.

Allie Hostler is an editor of the *Two Rivers Tribune*, a community newspaper that serves the Trinity and Klamath River Communities in Northern California. Hostler spoke on how these conditions are all inextricably linked to the centuries of systematic oppression that Indigenous people face: “We struggle with health disparities, unusually high rates of heart disease, diabetes, and substance abuse. That all comes with being oppressed, that comes with poverty.” The magnitude of the effects of the pandemic has pushed smaller operations like the *Two Rivers Tribune* to their limits. Hostler works nights for the newspaper, making sure crucial information is readily available to the public, and during the day she spends 40 to 60 hours per week working as the Operations Section Chief for the local COVID-19 Incident Management Team. “We get hit with Covid when we’re already struggling to keep up academically, financially, mentally, and emotionally,” Hostler explained. “And it’s just this big boom.” The shock waves of this boom know no boundaries, reverberating through countless spheres of society, leaving nothing untouched.

One specific health disparity that has been exacerbated by the pandemic is substance abuse. Indigenous people suffer from alcohol use disorder at rates 14.9 percent greater than those of other racial demographics and also exhibit increased rates of general drug usage and mental health concerns (Fuller, 2019). “You could ask anyone here if there’s been increased drug activity over the course of the pandemic and they’re going to say ‘yes,’” Hostler stated. “There’s also a huge risk of the loss of culture,” she continued, “not only from Covid but also from the drug epidemic. People who are keepers of knowledge, if they aren’t healthy in a way that allows them to meaningfully participate and share their wisdom, then we risk losing that knowledge.”

Rhonda Bigovich, a member of the Hoopa Valley Tribe and lead reporter for the *Two Rivers Tribune*, is closely involved with community

support groups for people recovering from addiction. There have been several youth overdoses during the past year in her community, she said as she explained the impact that the pandemic has had on substance usage. The cancellation of support group meetings per COVID-19 restrictions has left people without their core means of support for over a year. “Typically, we’d have these resources to go to for support, but it’s all fallen apart completely,” Bigovich commented. Her biggest concern lies with the community’s Narcotics Anonymous (NA) group. Because members of their NA group do not keep in contact with each other outside of their in-person meetings, Bigovich explained that the impact of having these services completely shut down for such a long period of time could lead to people not returning to meetings, even once they are back up and running.

Jeanine Gaines, a member of the Citizen Potawatomi Nation, also remarked on how these behavioral health problems have been exacerbated by the pandemic. Gaines is the Communications Manager for the Sacramento Native American Health Center (SNAHC), overseeing its internal and external communications, outreach, marketing, advertising, and social media—to name only a few of her responsibilities. Gaines’ packed schedule was projected onto the background of her Zoom window, with boxes and books stacked high behind her desk and a ceiling-to-floor whiteboard so full of writing it barely had any blank space to spare. And if that isn’t enough evidence of her crammed workdays, since the start of the pandemic, the Behavioral Health Department at SNAHC has seen a 106 percent increase in the number of appointments and outreach initiatives, Gaines said as she leafed through the various stacks of numbers and charts that would soon be transformed into SNAHC’s 2019–2020 Report. She said it’s a good thing that people are able to get support through SNAHC, “but we also know there’s still a huge population of people struggling out there who we just aren’t able to reach.”

Another factor of the pandemic that affects Indigenous communities in a crucially significant way is the threat that COVID-19 poses to older demographics. Christina Thomas shared that “the threat that Covid poses to our elders, our knowledge-keepers and culture-protectors, is a really scary thing.” In some Indigenous communities, elders are among the last remaining fluent speakers of the language, and COVID-19 threatens to sever that flow of knowledge before it has the chance to be passed on to the next generation.

Gaines remarked on how it was interesting to see the public's reaction when the pandemic first started, as many dismissed it as only a danger for old people. "Our elders are sacred," Gaines said passionately. "Dismissing Covid because it poses the greatest threat to elders is just not our way." She continued, "Unfortunately a lot of our elders have been lost through the pandemic, and it was very hard not being able to hold ceremonies while they were still here." Dozens of Native elders from the SNAHC community alone have passed. "It's been difficult. A lot of the ceremonies, songs, and dances are not supposed to be filmed, so then we're faced with the question of whether or not to break tradition and film the ceremonies so that the elders can see it and participate from their homes," said Gaines. Not only does COVID-19 threaten to take the lives of loved ones, but it also endangers culture and language, a burden that is largely specific to Indigenous communities.

The pandemic likewise brought about an unprecedented disruption of traditions and ceremonies. Hostler spoke about how their major community gatherings have not taken place in over a year, which has significant impacts on mental health in the community. "Public ceremonies are some of the most important events for people who have it rough, who may not have much hope, or who, for instance, struggle with substance abuse," Hostler elaborated. They rely on those public ceremonies for mental and emotional fortitude.

Indigenous children also rely on social groups that have been affected by the pandemic. Councilmember Joe Davis is a thirty-six-year-old representative for the Soctish-Chenone District of the Hoopa Valley Tribe and is the head organizer for the local youth football and cheerleading programs as well. He explained that athletics are a huge deal on the reservation: "There's not a lot else going on to keep the kids excited." With the cancelation of the athletic season and the closure of schools, the kids on the reservation have had an extremely rough time regarding lack of social interaction and physical exercise, combined with the ever-present stress of living through a pandemic.

As COVID-19 left no sector unscathed, it is not surprising that weaknesses in local infrastructure were brought to light over the past year as well. AI/AN people suffer from higher rates of food insecurity due to centuries of institutionalized inequities. Research conducted by Blue Bird Jernigan et al. (2017) found that one in four Indigenous people experiences consistent food insecurity, compared to one in nine Americans

nationally. “We don’t have five grocery stores to choose from; we have one,” Hostler stated. “So if there’s an outbreak at the store and it closes down, our entire community doesn’t have access to food. The pandemic really exposed the weaknesses in our food systems.” Councilmember Davis further elaborated on how COVID-19 has affected the food supply by causing issues in the community’s supply lines, leaving shelves at the local grocery store barren. “I think we can’t be so dependent on outside sources,” Councilmember Davis said, as he explained that this was a wake-up call to start increasing production of food locally and further build self-sufficiency wherever possible. For him, this incident exposed how a seemingly unrelated catastrophe, like the spread of a virus, affects things as crucial as the supply of food when infrastructure and resources are already stretched so thin. Gaines likewise explained how it has been a challenge to keep vital services like grocery stores and gas stations operational, and how necessities as basic as water access have been threatened by the pandemic. “Our water treatment plant has two guys that know how to treat the water. If one of them got Covid and the other one was exposed and had to be quarantined, then all of a sudden our entire community’s source of clean water is threatened.”

Inadequate access to the internet has posed another problem throughout the COVID-19 pandemic, especially regarding distance learning for students. Large portions of the Trinity and Klamath River communities do not have internet access, which is part of why print media like the *Two Rivers Tribune* is such a vital source of information. “To have missed a whole year of school and also not have internet access for much of that time,” Hostler said, “it’s been a rough year for our students.” As cited in Feir et al. (2019), the U.S. Census Bureau released estimates that demonstrate significant disparities in internet access, with some AI/AN reservations having fewer than 55 percent of households with broadband access, compared to the national average of almost 80 percent. Having no internet access tends to throw a wrench into the process of taking classes online, not to mention being able to access crucial public health information, guidelines, and news.

During public health crises, visibility can be a matter of life and death, affecting everything from federal funding to epidemiology and data collection. “Ours is a part of the world that gets very little press coverage,” Hostler remarked. When asked about the role of visibility in SNAHC’s work, Gaines spoke about how accurate data collection surrounding

COVID-19 cases and mortality among Indigenous populations is crucial. “Our Native people are being hidden,” she explained. COVID-19 death rates, especially in urban areas, are inaccurately recorded because of restrictive options for Indigenous people when it comes to denoting their race and ethnicity. For instance, racial misclassification is a common occurrence, which leads to underestimates when it comes to COVID-19 data in specific demographics. According to the CDC (Arias et al. 2016), Indigenous people were racially misclassified on their official death certificates up to 40 percent of the time. “So there’s been this huge push to get accurate numbers,” Gaines explained. “We see these Covid death rates, but we know that they’re probably even higher for Indigenous people, it’s just that the data is not reflective of our community.” A friend of Gaines’s, a young woman, lost both her grandmother and her aunt to COVID-19 and, “instead of grieving, she was trying to fight to make sure they were visible . . . . She said the last thing she could do for them was to try to make sure they were accurately represented.”

And yet in the midst of this crisis we see rays of hope, shining outpourings of solidarity and support, and an astounding willingness to adapt to changing circumstances. “At SNAHC, we’ve had to pivot a lot to support our patients,” explained Gaines. Fifty percent of patients served by SNAHC have multiple chronic health issues, putting them at an increased risk for severe disease and death from COVID-19. One major change that happened at SNAHC was a shift to telehealth. At the beginning of the pandemic, SNAHC’s Behavioral Health Department transferred completely to online visits, and medical health departments went 80 percent online. And this transition all happened in the blink of an eye; the change was drastic, to say the least. SNAHC employees found themselves rearranging in-clinic activities to mitigate the spread of COVID-19, organizing virtual telehealth appointment systems, and setting up and implementing huge testing and then vaccination campaigns, on top of all of the other basic services provided by the center. And still, every week the medical team improved their processes to be faster, safer, and more efficient. “Their willingness to change processes at a moment’s notice—it’s like a well-oiled machine,” Gaines explained with passionate admiration.

Hostler reported a similarly bright outlook regarding vaccinations among the Hoopa Valley Tribe, where over 45 percent (around 1,450 people) of the eligible population had been vaccinated by mid-April

2021. Tribal leaders even made the effort to call every tribal elder to offer vaccines, schedule appointments, answer questions, and make home visits when requested. For a small community with a significant proportion of the population being under sixteen years of age, having vaccines in at least 1,450 arms is an incredible feat.

However, testing and vaccinations are not the only ways in which communities have worked to battle this pandemic. A care package program started by Christina Thomas helped connect and comfort many families. Initially, Thomas established the program as a way to get personal protective equipment (PPE) and traditional medicines into the hands of community members. However, as support increased and donations grew, the lucky recipients opened their doors to packages filled with much more than just PPE. Alongside masks and hand sanitizer sat bread, potatoes, fruit, veggies, canned goods, puzzles, books, and more. But Thomas didn't stop there—she wanted to do a little something extra for the kids. By the time August 2020 rolled around and (virtual) school was back in session, Thomas and her partners were able to donate over three hundred backpacks, each stuffed with school supplies, PPE, and some extra goodies too.

In quiet reflection, Allie Hostler spoke of the things that fortify her: a recent decline of COVID-19 cases among the Hoopa Valley Tribe, the strength of her community, the gradual re-opening of schools, the beautiful weather. And as she spoke, birds chirped in the background, affirming the arrival of spring—nature's song of solidarity. Hostler elaborated, “There's a sense of hope here. We've been very resilient so far, and my hope is that we continue that resiliency, that we appreciate our community events even more, and that we cherish every chance we get to be together.”

*Author's Note: I would like to express my sincerest thanks and deepest appreciation to Jeanine Gaines (Citizen Potawatomi Nation), Allie Hostler (Hoopa Valley Tribe), Christina Thomas (Northern Paiute, Western Shoshone, and Hopi), Rhonda Bigovich (Hoopa Valley Tribe), and Councilmember Joe Davis (Hoopa Valley Tribe) for sharing with me their invaluable knowledge, insight, and experiences.*

## References

- Arias, E., Heron, M., & Hakes, J. K. (2016). The Validity of Race and Hispanic-origin Reporting on Death Certificates in the United States: An Update. *Vital Health and Statistics*, 2(172), 1–21. [www.cdc.gov/nchs/data/series/sr\\_02/sr02\\_172.pdf](http://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf)
- Blue Bird Jernigan, V., Huyser, K. R., Valdes, J., & Simonds, V. W. (2017). Food Insecurity Among American Indians and Alaska Natives: A National Profile Using the Current Population Survey–Food Security Supplement. *Journal of Hunger and Environmental Nutrition*, 12(1), 1–10. [doi.org/10.1080/19320248.2016.1227750](https://doi.org/10.1080/19320248.2016.1227750)
- Feir, D., Todd, R. M., & Weyrauch, K. (2019, January 7). *The Digital Divide in Indian Country: Reservations' broadband access rates vary widely, but lag national averages*. Federal Reserve Bank of Minneapolis. [www.minneapolisfed.org/article/2019/the-digital-divide-in-indian-country](http://www.minneapolisfed.org/article/2019/the-digital-divide-in-indian-country)
- Fuller, K. (2019, December 10). *Substance Abuse in the Indigenous Community*. Discovery: Mood and Anxiety Program. [discoverymood.com/blog/substance-abuse-in-the-indigenous-community](https://discoverymood.com/blog/substance-abuse-in-the-indigenous-community)
- International Indian Treaty Council. (2020, June 18). *COVID-19 and the Rights of Indigenous Peoples: The International Indian Treaty Council calls for Rights-based Responses and Denounces On-going Human Rights Violations*. [www.iitc.org/covid-19-and-the-rights-of-indigenous-peoples](http://www.iitc.org/covid-19-and-the-rights-of-indigenous-peoples)
- Power, T., Wilson, D., Best, O., Brockie, T., Bourque Bearskin, L., Millender, E., & Lowe, J. (2020). COVID-19 and Indigenous Peoples: An Imperative for Action. *Journal of Clinical Nursing*, 29(15–16), 2737–2741. [doi.org/10.1111/jocn.15320](https://doi.org/10.1111/jocn.15320)
- Ryan, C., & Lewis, J. M. (2017, September 11). Computer and Internet Use in the United States: 2015. *U.S. Census Bureau American Community Survey Report*. [www.census.gov/library/publications/2017/acs/acs-37.html](http://www.census.gov/library/publications/2017/acs/acs-37.html)
- Stokes, E. K., Zambrano, L. D., Anderson, K. N., Marder E. P., Raz, K. M., El Burai Felix, S., Tie, Y., & Fullerton, K. E. (2020). Coronavirus Disease 2019 Case Surveillance—United States, January 22–May 30, 2020. *Morbidity and Mortality Weekly Report*, 69(24), 759–765.

*“Our Ancestors Have Gone Through This Before”*

[doi.org/10.15585/mmwr.mm6924e2](https://doi.org/10.15585/mmwr.mm6924e2)

The United Nations Department of Economic and Social Affairs. (2020, May 8). *Policy Brief No. 70: The Impact of COVID-19 on Indigenous Peoples*. The United Nations. [www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB\\_70.pdf](http://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB_70.pdf)

Yellow Horse, A. J., & Huyser, K. R. (2021). Indigenous Data Sovereignty and COVID-19 Data Issues for American Indian and Alaska Native Tribes and Populations. *Journal of Popular Research*, 1–5. [doi.org/10.1007/s12546-021-09261-5](https://doi.org/10.1007/s12546-021-09261-5)

## California's Vaccine Rollout Presents Barriers for Disabled People

DANIEL ERENSTEIN



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*WRITER'S COMMENT: During an 1892 speech, investigative journalist Ida B. Wells said that "the way to right wrongs is to turn the light of truth upon them." By exposing the lies that white Southerners told to justify lynchings of Black people after the Civil War, Wells' work embodies her words. In Sasha Abramsky's UWP 104C course, we learned that journalism, at its best, shines this "light of truth" on the injustices of our time. For our feature story assignment, Sasha asked us to report on the life and times of California during the COVID-19 pandemic. In January, the state pivoted away from its initial phased vaccine rollout to a speedier age-based approach, deprioritizing eligibility for disabled and immunocompromised people younger than sixty-five years old. As disabled Californians found community online through hashtags like #HighRiskCA, I was drawn to their stories. My reporting follows the difficulties encountered by high-risk Californians during this time, examines where the state fell short, and seeks to answer questions about how we build a healthier future for disabled people. On multiple occasions, Sasha brought his extraordinary eye for impactful journalism to our conversations—I extend my gratitude to him for his guidance throughout this project.*

*INSTRUCTOR'S COMMENT: In teaching my journalism students, I always hope that they will, in doing their reporting and writing, come to see the complexities and nuances of the stories that they are weaving. Some of my students manage this, others struggle. In Daniel's case, from his first writing assignments, I knew that he was a born journalist. His skill at telling a story, and at weaving complexity and also color into*

*his narrative stood out. In choosing to tell the stories of a particular group of people—disabled Californians—and the obstacles they faced in getting vaccines during the early days of the vaccine rollout, Daniel brought both an eye and an ear for detail to his work. He used quotes and voice to powerful effect, and ended up with a journalism narrative that, frankly, stunned me with its sophistication. I am delighted that this piece has been chosen for Prized Writing, and I look forward to following Daniel's writing career over the coming years...*

—Sasha Abramsky, University Writing Program

**I**t was Gillian Ladd's forty-eighth birthday when she received news in January that she would have to wait months to become eligible for a COVID-19 vaccine in California. For Ladd, the news was "crushing."<sup>19</sup>

Ladd has lived with brittle diabetes—characterized by sharp swings in blood sugar levels—for the last forty-two years following an early childhood diagnosis. In 2010, the toll of the disease kickstarted a process of kidney failure that made her a transplant candidate. Eight years later, she received a rare simultaneous pancreas and kidney transplant, and she has been on immunosuppressive medication in the years since.

These conditions make Ladd higher risk for serious complications were she to become infected with COVID-19.<sup>24</sup>

Within hours of the news, Ladd reached out to her transplant center, which had "no advice" for her. She also inquired with the San Francisco Department of Public Health, which said that they were essentially "powerless" and could not make exceptions for high-risk disabled people.

Ladd's search for help then led her to the California Department of Public Health. She "never heard anything back" after writing to Dr. Tomás Aragón, the department's director.

"It's terrifying to breathe the air, and then to be told that I wasn't worth figuring out by the governor, by the health department? That was very distressing to me," Ladd said. "I've never felt so disposable in my life."

The state's early tiered framework for vaccine rollout initially included at-risk disabled people in phase 1C.<sup>7</sup> But in late January, amid growing criticism about a slow start during the first six weeks of vaccine distribution, state officials pivoted, announcing a significant expansion

of eligibility to educators, food service employees, first responders, and Californians over sixty-five years of age.<sup>14, 25</sup> Absent from the state's new policy on eligibility were California's estimated five million disabled residents under sixty-five.<sup>12</sup>

This shift to an age-based system for vaccine eligibility “will allow us to scale up much more quickly and get vaccines to impacted communities much more expeditiously,” Gov. Gavin Newsom said during a January 25 press conference.<sup>9</sup>

While the amended eligibility was meant to broaden the scope of vaccine recipients with respect to racial and economic equity, it left high-risk disabled Californians under sixty-five on their own to figure out when, where, and how they would be able to get a vaccine.

The next day, Yolanda Richardson, secretary of the California Government Operations Agency, explained the decision. “We want to make sure that nothing slows down the administration of vaccine other than the pace with which vaccine arrives in the state,” said Sec. Richardson. “We’re going to do that by balancing safety, speed, and equity while scaling up to meet the level of vaccine needed in the state.”<sup>5</sup>

The response to this announcement from the disabled community was swift. Alice Wong, a disabled activist from San Francisco who has spinal muscular atrophy, posted a call to action on YouTube within days. “Age is not the only factor in determining risk,” Wong said. “This decision by the Newsom administration is an act of violence and erasure toward groups disproportionately impacted by the pandemic. It is racist, classist, and ableist.”<sup>35</sup>

Subsequent advocacy efforts through online platforms, including #HighRiskCA on Twitter and other social media sites, have highlighted inconsistencies and inequities in the vaccine rollout. In their shared struggles, many disabled Californians like Ladd have found community with others online while they cannot gather in person.

“I’ve never been in such great risk to go outside that I haven’t been able to demonstrate or show up on somebody’s doorstep or be active,” Ladd said. “I’m an activist at heart.”<sup>19</sup>

Since late November, the state’s Community Vaccine Advisory Committee has been working on ensuring equitable access to COVID-19 vaccines.<sup>8</sup> But as California and other states have raced to vaccinate their residents at record pace, specific communities, including disabled people, have seen lower rates of vaccination.

Taking steps to reduce inequity, the governor's office worked with over twenty philanthropic foundations to fund the Together Toward Health initiative, a project managed by the Public Health Institute. The program has committed over \$23 million to community based organizations, which naturally adapted their outreach and networks to pandemic efforts because they were "already trusted" in their communities, said Sue Watson, the initiative's director.<sup>30</sup>

The state provided vaccine access codes to hundreds of these community groups to schedule priority appointments for their vulnerable populations. But these codes were intended mostly for the state's low-income, Latino, and Black residents, and confusion spread throughout disabled communities about whether the codes applied to them.

"It was very unclear who they were intended for. And so, there was a sense of, like, who's supposed to be using these?" said Jessica Lehman, executive director of Senior and Disability Action, a disability rights organization based in San Francisco. "There were a bunch of disabled people who used the codes to sign up for appointments" which were later cancelled because they "didn't meet the criteria," Lehman said.<sup>20</sup>

In February, reports that healthy and affluent residents were misusing these shared codes surfaced in San Francisco<sup>3</sup> and Los Angeles,<sup>34</sup> and the governor replaced the group codes with individual ones<sup>29</sup> shortly thereafter to prevent linecutting. Ladd, who received the vaccine using an equity code that was "not intended" for her, found these missteps frustrating.

"What I have contended since I learned that there were equity codes was why the hell weren't the organ transplant recipients given that code?" Ladd said, adding that it is "easy enough" for the state "to contact the major medical centers and say, 'Hey, here's a code for your highest risk patients. Send it out to them.'"<sup>19</sup>

Advocates say that outreach to disabled individuals has not adequately met the needs of this community. Instead, millions of disabled and older Californians have relied on family caregivers<sup>23</sup> to care for their pandemic needs and to advocate for vaccine access.<sup>22</sup> Kenny Strohmaier, a disabled resident of Redwood City, lives with his sister, Karen, who has cared for him for over two decades.<sup>28</sup> Diagnosed in early childhood with a neurodevelopmental disability that impacted his movement, balance, and learning, Kenny has adapted well to various physical and social challenges throughout life. More recently, however, Kenny has begun aging at a rapid rate, resulting in significant health complications.

During the pandemic, Karen’s concerns for her brother’s health have been heightened due to his underlying conditions. Kenny was born with two kidneys, but one of them failed him in adulthood. In 2017, he underwent four kidney surgeries in five days and suffered a similar relapse in 2019. Even though Kenny’s impaired kidney function and other disabilities are high-risk conditions, Karen said his nephrologist refused to make the vaccine available to Kenny in early 2021 until he was eligible. At sixty-four, Kenny was just one year short of the state’s age requirement for vaccine eligibility.

“I wasn’t okay with that answer, so I climbed the medical ladder of his other doctors,” Karen said. To no avail, she continued to seek support from the appropriate medical contacts.

With the help of physician friends who were aware of their situation, Kenny and Karen received a chance call in late January that leftover shots were available that same day at the Ravenswood Family Health Center vaccine clinic in East Palo Alto. “We raced there right away. I was honest that he wasn’t sixty-five and the shot was for him,” Karen said. “They took both of us and put Kenny at the front of the line, no questions asked.”

In part, the clinic was organized to meet vaccine equity goals for the economically disadvantaged communities of San Mateo County. This type of collaboration—where local counties, nurses, fire departments, and other organizations work together to identify and fulfill the community’s needs—is the main goal of the Public Health Institute’s Together Toward Health initiative.

If not for the clinic, Kenny and Karen would have had to wait until March or April to receive their vaccine shots. Their story represents an early success, but wider access to vaccine eligibility was still weeks away for a majority of the state’s disabled population.

With support from disability rights groups, high-risk Californians scored a collective victory on February 12, with an announcement from state officials that eligibility would be expanded in mid-March to those with any underlying health conditions<sup>24</sup> that elevate their risk of COVID-19 complications.<sup>16</sup>

For many disabled people who had been left in limbo for weeks, the updated eligibility was welcomed with relief. The March 15 date for expanded eligibility has since come and gone, and optimistic vaccination stories have populated the online feeds of many disability rights groups.

But for some disabled people, the challenges continue. The websites of many public health departments are inaccessible to blind

or visually impaired people who use screen readers,<sup>31</sup> which violates the Rehabilitation Act of 1973<sup>15</sup> and the Americans with Disabilities Act of 1990.<sup>26</sup> And the social media feeds of many government agencies are missing alternative text<sup>2</sup> or video captions<sup>10</sup> that allow blind or deaf people the same access to information as abled people.<sup>21</sup>

“This is one of the challenges of having fifty-eight counties and all these different local folks that are trying to stand up something that has a much bigger public interface than anything they’ve ever done,” said Andy Imparato, executive director of Disability Rights California.<sup>17</sup>

In addition to these web accessibility issues, transportation to and from a vaccination site presents a barrier for some disabled people, said Imparato, who also serves on California’s vaccine advisory committee. “There’s an effort on the part of the state right now to try to get the vaccine to people where they are. But that’s going to take time,” Imparato said.

In May, the state announced a partnership with Healthy Future California, the University of California, Los Angeles, and seventy community based organizations to take vaccination efforts door-to-door.<sup>27</sup> Canvassers are bringing mobile vaccinations to underserved communities to boost the state’s vaccination numbers. Many organizations have also taken up the mantle to provide mobile clinics to rural communities, and President Joe Biden has followed suit at the federal level with his own “community corps.”<sup>32</sup>

The biggest barriers to these efforts are money, people power, and the logistics of keeping the shots at their required temperatures throughout the day, experts say.

“That doesn’t change the fact that it needed to be done, and that the state had to find ways to do it,” said Silvia Yee, a senior staff attorney at Disability Rights Education and Defense Fund. For the most part, local authorities were managing these efforts on their own while the state looked to “one big contractor,” which was not necessarily ideal, Yee said.<sup>36</sup>

Carolyn, mother to Kristin, a twenty-eight-year-old disabled woman, knows that the state can “do better” at bringing vaccines to disabled people. At five years of age, Kristin was full of energy and life, and her family could never have imagined that complications during a surgery to remove a brain tumor would leave Kristin blind, nonverbal, and unable to walk without assistance. Kristin later developed scoliosis and was diagnosed with dystonia, a serious neurological disorder characterized by painful muscle spasms and a loss of muscle control. In the twenty-four

years since her surgery, Kristin has persevered through multiple physical, social, and educational hurdles but remains very limited in her ability to navigate the world without full-time care. With the support of her family, Kristin continues to live at home with her parents, who serve as full-time guardians and advocates.<sup>11</sup>

Kristin's disabilities are severe, which qualifies her for care through California's regional centers for people with developmental disabilities.<sup>6</sup> Despite Carolyn's advocacy, Kristin waited alongside most high-risk Californians for months to receive her vaccine shot. Finally, on April 13, weeks after California opened up shots to disabled people, Kristin was vaccinated at a CVS—a thirty minute drive from her home.

"If she would have had some sort of adverse reaction, it would have been a nightmare," Carolyn said. "People shopping all around there, and then you're going to have somebody with a disability laying on the floor in the middle of a CVS, right?"<sup>11</sup>

Like Ladd, who struggled to find solutions from her doctors and government officials, Carolyn was disappointed by the lack of outreach from medical institutions. "It's really easy to pick out the people that have severe disabilities [since childhood] because they're all, in California, run through the regional centers," Carolyn said, adding that disabled people should have received their "location preference" for vaccinations in a timely manner.

Even with these challenges, Carolyn emphasizes that "financial means" and involvement as an advocate "makes a huge difference." "So many people with disabilities don't come from [a place] of having economic means, people that can advocate for them, and education," Carolyn said.

These factors, along with inequities in access to nutritious food, health care, and safe environments, are what public health experts call social determinants of health. During the pandemic, reliable access to a computer and the Internet also affected how accessible a vaccine appointment might be.

Understanding how these social determinants of health have impacted disabled people during the COVID-19 pandemic is crucial to improving access and equity in the future. To do this, disability advocates need consistent data, said Imperato,<sup>17</sup> who has worked on this issue as a member of the Biden administration's COVID-19 health equity task force.<sup>33</sup> "The lack of data was an equity issue. And then, [the] CDC and others were using that lack of data as a reason not to prioritize people

for life-saving vaccines, so I felt like they were punishing people for something that wasn't their fault," Imparato said.<sup>17</sup>

After advocating at several meetings of the state's vaccine advisory committee for data that takes a closer look at vaccine access, Denny Chan, a senior staff attorney at Justice in Aging, noticed a gap in access for older adults. He says that some other states have done a "better job" of providing data, and organizations can use this information to more effectively inform equitable strategies that close gaps in access.<sup>13</sup>

Many disabled advocates, like Imparato, are hopeful about the future of health access.

"We have generational opportunities to improve equity for people with disabilities," Imparato said, adding that issues with data, research, and federal resources need to be addressed as "we think about how a culture of public health needs to be more disability-competent." Imparato continued, "I'm hopeful that a lot of the leaders in public health now realize that they need to have more knowledge and more relationships around disability."<sup>17</sup>

At Johns Hopkins School of Medicine, a team of researchers is working to fill these gaps in data and research by studying the immune response of organ transplant recipients, who take immunosuppressant medications for life, to two doses of a COVID-19 vaccine. The study, which was recently published in the *Journal of the American Medical Association*, enrolled 658 organ transplant recipients.<sup>18</sup> More than 45 percent of the study's participants had little or no immunity to COVID-19 following full vaccination.<sup>4</sup>

For transplant recipients like Gillian Ladd, these concerns about immunity are long lasting, even after full vaccination. She worries about staying safe as California inches toward its planned June 15 reopening before reaching herd immunity levels. "It really seems that we're a tiny little iota of the disability community that is still not receiving equity," Ladd said.<sup>19</sup> "A complete lack of acknowledgement makes it feel very clear that not only am I not a priority, but that I have no value. And that there's no respect for what I've gone through medically, and there's no respect for what somebody else has given up and lost in order for me to still be alive and have a second chance."

"And it feels like a slap in the face, all while I'm afraid to breathe."

## References

1. *About—The Disability Visibility Project*. (2021). The Disability Visibility Project. [disabilityvisibilityproject.com/about/](https://disabilityvisibilityproject.com/about/)
2. *Alternative Text*. (2019, October 14). WebAIM, Institute for Disability Research, Policy, & Practice, Utah State University. [webaim.org/techniques/alttext/](https://webaim.org/techniques/alttext/)
3. Bobrowsky, M. (2021, February 24). Vaccine access codes meant for underserved groups are getting shared by text among healthy, privileged Bay Area residents. *San Francisco Chronicle*. [www.sfchronicle.com/health/article/Vaccine-access-codes-meant-for-underserved-15974550.php](https://www.sfchronicle.com/health/article/Vaccine-access-codes-meant-for-underserved-15974550.php)
4. Boyarsky, B. J., Werbel, W. A., Avery, R. K., Tobian, A. A. R., Massie, A. B., Segev, D. L., & Garonzik-Wang, J. M. (2021). Antibody Response to 2-Dose SARS-CoV-2 mRNA Vaccine Series in Solid Organ Transplant Recipients. *JAMA*, *325*(21), 2204–2206. [doi.org/10.1001/jama.2021.7489](https://doi.org/10.1001/jama.2021.7489)
5. CA Public Health. (2021, January 26). *1/26/2021: CHHS Secretary Dr. Mark Ghaly Provides Update on COVID-19 in California* [Video]. YouTube. [youtu.be/6ta5y6R3GsI](https://youtu.be/6ta5y6R3GsI)
6. California Department of Developmental Services. (2009, June 8). *Regional Centers*. [www.dds.ca.gov/rc/](http://www.dds.ca.gov/rc/)
7. California Department of Public Health. (2020, October 16). *State of California COVID-19 Vaccination Plan: Interim Draft, Version 1*. [www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/COVID-19-Vaccination-Plan-California-Interim-Draft\\_V1.0.pdf](http://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/COVID-19-Vaccination-Plan-California-Interim-Draft_V1.0.pdf)
8. California Department of Public Health. (2021). *Community Vaccine Advisory Committee*. [www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Community-Vaccine-Advisory-Committee.aspx](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Community-Vaccine-Advisory-Committee.aspx)
9. California Governor Gavin Newsom. (2021, January 25). *Governor Newsom California COVID-19 Update: January 25, 2020* [Video]. YouTube. [youtu.be/O0MRjtslGXU](https://youtu.be/O0MRjtslGXU)
10. *Captions, Transcripts, and Audio Descriptions*. (2020, July 1). WebAIM, Institute for Disability Research, Policy, & Practice, Utah State University. [webaim.org/techniques/captions/](https://webaim.org/techniques/captions/)

*California's Vaccine Rollout Presents Barriers for Disabled People*

11. Carolyn (2021, June 1). Personal Communication [audio interview].
12. Centers for Disease Control and Prevention, & National Center on Birth Defects and Developmental Disabilities. (2021, June 28). *Disability and Health Data System*. Centers for Disease Control and Prevention. [dhds.cdc.gov](https://dhds.cdc.gov)
13. Chan, D. (2021, May 18). Personal Communication [audio interview].
14. Cowan, J. (2021, January 14). Newsom on Covid: 'There Are Some Good Things to Report.' *The New York Times*. [www.nytimes.com/2021/01/14/us/ca-covid-vaccines.html](https://www.nytimes.com/2021/01/14/us/ca-covid-vaccines.html)
15. H.R.8070 - An Act to replace the Vocational Rehabilitation Act. (1973). Washington, D.C.: 93rd U.S. Congress. [www.congress.gov/bill/93rd-congress/house-bill/8070](https://www.congress.gov/bill/93rd-congress/house-bill/8070)
16. Hubler, S. (2021, February 12). California extends vaccine eligibility to people with disabilities after backlash. *The New York Times*. [www.nytimes.com/2021/02/12/world/covid-coronavirus-california-vaccines-disabilities.html](https://www.nytimes.com/2021/02/12/world/covid-coronavirus-california-vaccines-disabilities.html)
17. Imparato, A. (2021, May 18). Personal Communication [audio interview].
18. Johns Hopkins Medicine. (2021, May 5). *Organ Transplant Recipients Remain Vulnerable to COVID-19 Even After Second Vaccine Dose*. [www.hopkinsmedicine.org/news/newsroom/news-releases/organ-transplant-recipients-remain-vulnerable-to-covid-19-even-after-second-vaccine-dose](https://www.hopkinsmedicine.org/news/newsroom/news-releases/organ-transplant-recipients-remain-vulnerable-to-covid-19-even-after-second-vaccine-dose)
19. Ladd, G. (2021, May 13). Personal Communication [audio interview].
20. Lehman, J. (2021, May 14). Personal Communication [Zoom interview].
21. Lynch, M. [@may\_gun]. (2020, December 30). *This is something sighted people do as they start to learn to use alt text. Sometimes they don't put in* [Tweet]. Twitter. [twitter.com/may\\_gun/status/1344828653985677313](https://twitter.com/may_gun/status/1344828653985677313)
22. Marshall-Chalmers, A. (2021, January 21). *How am I going to keep this up? COVID intensifies plight of family caregivers*. CalMatters. [calmatters.org/health/2021/01/covid-family-caregivers-plight-california/](https://calmatters.org/health/2021/01/covid-family-caregivers-plight-california/)

23. National Alliance for Caregiving, & AARP Public Policy Institute. (2020). *Caregiving in the U.S. 2020*. [www.aarp.org/content/dam/aarp/ppi/2020/05/full-report-caregiving-in-the-united-states](http://www.aarp.org/content/dam/aarp/ppi/2020/05/full-report-caregiving-in-the-united-states). doi.10.26419-2Fppi.00103.001.pdf
24. National Center for Immunization and Respiratory Diseases, & Division of Viral Diseases. (2021, May 13). *People With Certain Medical Conditions*. Centers for Disease Control and Prevention. [www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html](http://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html)
25. Ostrov, B. F. (2021, January 26). *Educators, food workers join California's priority list for vaccines*. CalMatters. [calmatters.org/health/coronavirus/2021/01/teachers-food-workers-california-priority-vaccines/](http://calmatters.org/health/coronavirus/2021/01/teachers-food-workers-california-priority-vaccines/)
26. S.933 - Americans with Disabilities Act of 1990. (1990). Washington, D.C.: 101st U.S. Congress. [www.congress.gov/bill/101st-congress/senate-bill/933](http://www.congress.gov/bill/101st-congress/senate-bill/933)
27. Sheeler, A. (2021, May 19). Knock, knock. Have you had your vaccine yet? California sends out thousands to check. *The Sacramento Bee*. [www.sacbee.com/news/coronavirus/article251511048.html](http://www.sacbee.com/news/coronavirus/article251511048.html)
28. Strohmaier, K. (2021, May 20 & 26). Personal Communication [Messenger].
29. Taxin, A. (2021, February 24). California halts system of shared vaccine codes after misuse. *AP NEWS, Associated Press*. [apnews.com/article/los-angeles-california-coronavirus-pandemic-5a839be22bee1d29b2c05a5165daeb97](https://apnews.com/article/los-angeles-california-coronavirus-pandemic-5a839be22bee1d29b2c05a5165daeb97)
30. Watson, S. (2021, May 17). Personal Communication [Zoom].
31. Weber, L., & Recht, H. (2021, February 25). COVID-19 vaccine websites violate disability laws, create inequity for the blind. *Los Angeles Times*. [www.latimes.com/california/story/2021-02-25/covid-19-vaccine-websites-violate-disability-laws-create-inequity-for-the-blind](http://www.latimes.com/california/story/2021-02-25/covid-19-vaccine-websites-violate-disability-laws-create-inequity-for-the-blind)
32. Weiland, N. (2021, May 16). In New Vaccination Push, Biden Leans on His 'Community Corps.' *The New York Times*. [www.nytimes.com/2021/05/16/us/politics/coronavirus-vaccination.html](http://www.nytimes.com/2021/05/16/us/politics/coronavirus-vaccination.html)
33. The White House Briefing Room (2021, February 10). *President*

*Biden Announces Members of the Biden-Harris Administration COVID-19 Health Equity Task Force* [Press release]. [www.whitehouse.gov/briefing-room/press-briefings/2021/02/10/president-biden-announces-members-of-the-biden-harris-administration-covid-19-health-equity-task-force/](https://www.whitehouse.gov/briefing-room/press-briefings/2021/02/10/president-biden-announces-members-of-the-biden-harris-administration-covid-19-health-equity-task-force/)

34. Wick, J., Lau, M., & Nelson, L. J. (2021, February 23). Newsom vows changes after vaccine earmarked for hardest-hit communities improperly used by others. *Los Angeles Times*. [www.latimes.com/california/story/2021-02-23/california-changes-plan-after-vaccine-equity-program-gets-misused](https://www.latimes.com/california/story/2021-02-23/california-changes-plan-after-vaccine-equity-program-gets-misused)
35. Wong, A. (2021, January 28). *Remarks by Alice Wong on vaccine prioritization in California for high-risk groups* [Video]. YouTube. [youtu.be/w1n2YYpelyQ](https://youtu.be/w1n2YYpelyQ)
36. Yee, S. (2021, May 20). Personal Communication [audio interview].

## Open Source Medicine: Lessons in Innovation From the Software Industry



XANDER GOLDMAN

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*WRITER'S COMMENT: As an international relations major and pre-med student, my academic journey has been defined by the intersection of science and policy. Our fourth paper in UWP 104F gave me an opportunity to explore this intersection, as we were asked to discuss a social or political problem we see in the healthcare industry and to propose a solution. Intellectual property laws in the United States, while heralded for inspiring innovation, have also hindered the equitable distribution of life-saving medicine. Having found a problem to write about, I looked to the software industry for solutions, where increased access to trade tools and information drive R&D. I have no previous experience in computer science, and this paper allowed me to learn about a new field in a creative, interdisciplinary context. I hope that this paper can inspire others to look for innovative solutions in unlikely places.*

*INSTRUCTOR'S COMMENT: One happy feature of teaching in the University Writing Program is that we are often in a position to give our students learning experiences that are rare outside of our courses. I regularly teach Writing in the Professions: Health. My students are engaged in the (normally exhausting) business of gaining acceptance to graduate or professional school. They are neck-deep in very, very hard science. One option on the final assignment in my health writing course therefore invites the students to use their scientific expertise to express an opinion on a social or political issue affecting healthcare. While their support is drawn from the considerable knowledge they have of science, the stand they take is ethical or moral, the sort of thing they rarely get to do any more. Xander took the opportunity and ran with it. His*

*expertise is, if anything, wider than usual; he takes familiar problems in the pharmaceutical business and applies to them unfamiliar solutions from the world of software development. The result is an essay whose author is comfortable in many fields.*

—Scott Herring, *University Writing Program*

The pharmaceutical industry brings drugs to market based on the manufacturer's ability to generate profit from their sale. Intellectual Property (IP) rights are at the core of this model, as this allows drug developers to obtain patents on novel treatments. Some argue that IP protection drives innovation. Yet, as drug companies monopolize life-saving treatments, inequities in access to drugs are being exacerbated and drug prices are soaring. The World Health Organization reported in 2017 that nearly two billion people lacked access to affordable medicine, a sign that the process by which drugs are developed and distributed is broken. The software development industry offers a potential solution to the imperfect model utilized today: open source R&D. This alternative could bring forth an era of collaborative innovation that improves access to life-saving drugs while working within the constraints of a capitalist system.

Theoretically, IP laws serve as motivation for pharmaceutical companies to invest in the development of new drugs. Aaron Kesselheim (2007), of Harvard Medical School, explains that R&D requires substantial up front spending, and that market exclusivity serves as a financial motivator for companies to invest in the development of novel therapies. Patents secure a temporary monopoly on innovative treatments, which guarantees return on investment when drugs hit the market. This conceptualization posits that pharmaceutical R&D is primarily motivated by the promise of market exclusivity.

This incentive system has led to inequities in the distribution of drugs, however, and insulin serves as a compelling case study for the failure of the current model to support those most in need. Despite being a life-saving treatment discovered a hundred years ago, insulin is scarce throughout the developing world and unaffordable for many in the developed world. Luo and Gellad (2020) found that in the United States, the price per milliliter of insulin rose over 300 percent from 2002 to 2013 and that one in four Americans with diabetes use less insulin

than prescribed because of high costs. The factors contributing to the ineffective distribution of insulin are complex, but the United States' IP model plays an important role in this process.

The insulin market is noncompetitive; three companies dominate the market and no generic alternatives to name-brand insulin exist. As a large-molecule biologic drug, the lack of alternatives to insulin is partially because it is an inherently difficult drug to manufacture (Greene & Riggs, 2015). This is exacerbated by a process called evergreening, where pharmaceutical companies incrementally change a product in order to extend its patent and retain market control. Kaplan and Beall (2016) explain that in the case of insulin, these changes have been significant enough that brands who would otherwise be interested in manufacturing generics have determined that it would be economically inexpedient to develop a previous version of the drug that is no longer under patent. These brands have little financial motivation to invest in the development of a generic insulin alternative when it will already be outdated upon release, even if older versions of the drug could save lives. While it is true that current iterations of insulin are safer and more effective than its previous versions, Greene and Riggs (2015) argue that the lack of generic alternatives to insulin is a death sentence for those who cannot afford this life-saving drug. Insulin offers staggering insight into the flaws of the United States' approach to IP and of the human cost associated with drug development that prioritizes corporate wealth over public health.

IP laws have long been lauded for inspiring innovation, but these claims should not be taken at face value. An experiment by the University of Göttingen found that intellectual property rights hinder sequential innovation, a discovery that inverts Western understandings of how to promote creativity. This experiment showed that IP laws lead to a reduction in welfare and the development of less valuable and creative products, compared to the levels recorded without IP protection (Brüggenmann et al., 2016). While this experimental study may or may not translate perfectly to the real world, it is worth considering the drawbacks of relying on IP to stimulate innovation.

Open source software (OSS), a collaborative approach to innovation utilized in the software development industry, offers an enticing alternative to the extant incentive structure for pharmaceutical R&D. This approach enables users to freely view, edit, and share source code. OSS is a decentralized approach to problem solving, where individuals

around the world can contribute to, and learn from, other people's coding. Ubiquitous in software development, OSS has come to define how IP can be reimagined to benefit both private actors and the industry as a whole.

In practice, OSS enables computer programmers to easily and directly utilize the work of other contributors in their own projects. Andrew Goldman, CEO of ConfigureID, believes that open source coding streamlines the creative process. He explains that when foundational code is readily and freely available, engineers can "take an idea and riff on it" without having to build from the ground up. This leads to a "virtuous cycle of innovation," where one user's code can go on to be used by other developers in novel ways. OSS stimulates a snowball effect, enabling the development of vastly different products that originate from the same source code.

The incentive system utilized in OSS technology actively encourages firms and employees to engage in collaborative innovation, while still driving profits. For individual software developers, open source platforms operate as work portfolios that inform hiring and recruitment. Goldman explains that Github, a popular OSS site that tracks contributions made by community members, "can provide a window into [one's] professional abilities." Contributions to open source code are resume builders, where developers can publicly display their aptitudes and advance their own careers. Goldman argues that under OSS, "people act in ways that are good for both themselves and the community." This system incentivizes individuals to work on collaborative projects through mechanisms grounded in capital gain.

Firms are similarly motivated to contribute to OSS. Dirk Homscheid (2020), of the University of Koblenz-Landau, emphasizes that the rich, creative landscape of a platform like Github can improve the quality of products that firms develop. Facebook React, a JavaScript library for building user interfaces, offers a compelling example for how contributing to OSS can improve a product. When Facebook made React's source code publicly available, users around the world quickly fine-tuned and implemented this technology into different contexts. Goldman explains that efforts by open source coders made React "more powerful and broadly useful," which transformed the market value of the product overnight. Goldman points out that Facebook did not have to fund the improvements to React, either. OSS enabled Facebook to

outsource the creative process behind React at no cost and with impressive results.

The reward system intrinsic to a platform like Github functions well within the context of a profit-driven system; the motivations for individuals and firms align with improving the knowledge base for the general public. OSS offers a model for innovation that could revolutionize the way in which drugs are brought to market. To translate the OSS model to the pharmaceutical industry, one must first acknowledge the differences between software and drugs. Primarily, code is private unless deliberately made public. Guldman explains that the intellectual property of software engineers is protected by default, and that action must be taken for code to enter the public sphere. Conversely, medical technology is tangible and can be reverse engineered in a laboratory, which leads drug manufacturers to rely on legal avenues to protect their work. Furthermore, the distribution of improperly manufactured drugs could negatively impact the health of patients. Safety concerns underscore the need for oversight and regulation within the medical industry.

With these caveats in mind, an open source approach to medicine should be introduced gradually and utilized for specific purposes at first. Perkel, a senior technology editor for Springer, details a case in which the medical world has already made use of open source technology. During West Africa's 2014 Ebola outbreak, Caitlin Rivers, a PhD student in computational epidemiology, tracked data on the spread of the disease which she shared on Github. Scientists around the world contributed to this database, which helped form a complete picture of the virus's spread (Perkel, 2016). This informed the public health response and enabled the medical community to predict the disease's progression. While this example does not involve IP, it demonstrates how open source technology can be utilized to improve medical practices.

Open source technology within the pharmaceutical industry could initially center on repurposing existing drugs. Balasegaram et al. (2017) explain that most drugs have the potential to be utilized in novel ways, and that pharmaceutical companies often sit on their clinical and experimental data rather than introducing it to the public domain. Ordinarily, drug repurposing is conducted by the same firm that holds the drug's patent, but an open source approach could support a more efficient process of innovation. Decentralized drug repurposing can improve the availability of technical information without threatening

existing patents, making it an effective way to introduce open source R&D to the medical world.

As drug prices continue to rise and billions of people lack access to crucial medication, it is time to reevaluate the extant model for pharmaceutical R&D. The open source model used by the software industry presents an enticing alternative to IP laws, but the differences between the software and pharmaceutical markets pose a logistical challenge to the adoption of open source principals in the medical world. For this transition to be realized, further research should be conducted to explore how open source strategies can be effectively implemented in the pharmaceutical industry. The medical world's model for drug development and distribution is in need of change, and open source R&D offers a promising future.

## References

- Balasegaram, M., Kolb, P., McKew, J., Menon, J., Olliaro, P., Sablinski, T., Thomas, Z., Todd, M. H., Torreele, E., & Wilbanks, J. (2017). An open source pharma roadmap. *PLoS Medicine*, *14*(4), Article e1002276. doi.org/10.1371/journal.pmed.1002276
- Brüggemann, J., Crosetto, P., Meub, L., & Bizer, K. (2016). Intellectual Property Rights Hinder Sequential Innovation—Experimental Evidence. *Research Policy*. *Research Policy*, *45*(10), 2054–2068. doi.org/10.1016/j.respol.2016.07.008
- Greene, J. A., & Riggs, K. R. (2015). Why Is There No Generic Insulin? Historical Origins of a Modern Problem. *The New England Journal of Medicine*, *372*(12), 1171–1175. doi.org/10.1056/nejmms1411398
- Homscheid, D. (2020). Introduction. *Firm-Sponsored Developers in Open Source Software Projects. Innovation, Entrepreneurship und Digitalisierung*, 1–9. Wiesbaden, Germany: Springer. doi:10.1007/978-3-658-31478-1\_1
- Kaplan, W. A. & Beall, R. F. (2016). The global intellectual property ecosystem for insulin and its public health implications: an observational study. *Journal of Pharmaceutical Policy and Practice*, *10*, Article 3. doi.org/10.1186/s40545-016-0072-8
- Kesselheim, A. S. (2007). Intellectual property policy in the pharmaceutical sciences: the effect of inappropriate patents and market exclusivity extensions on the health care system. *The AAPS Journal*, *9*(3), E306–E311. doi.org/10.1208/aapsj0903033
- Luo, J., & Gellad, W. F. (2020). Origins of the Crisis in Insulin Affordability and Practical Advice for Clinicians on Using Human Insulin. *Current Diabetes Reports*, *20*(1), 2. doi.org/10.1007/s11892-020-1286-3
- Perkel, J. (2016). Democratic Databases: Science on Github. *Nature: London*, *578*(7623), 127–128. doi.org/10.1038/538127a
- World Health Organization. (2017, May 11). Access to medicines: making market forces serve the poor. *WHO: Medicines Selection, IP, and Affordability*. www.who.int/publications/10-year-review/chapter-medicines.pdf

# Addressing Thyroid Cancer Overdiagnosis with Diagnostic Changes and Individualized Treatments



LUCAS HALLMAN

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*WRITER'S COMMENT: The scientific research community has made great strides in uncovering the mechanism of cancer development at the molecular level over the past two decades. The challenge now faced by researchers is determining how this knowledge can be applied to the development of robust cancer treatments. My literature review, written for Amy Goodman-Bide's UWP 102B course, addresses recent therapeutic discoveries in the context of treating papillary thyroid carcinomas. This form of malignancy is accompanied by a very low risk of mortality, yet has become increasingly prevalent in developed countries like the United States. Surgical removal of the affected thyroid gland has long been considered the "best" treatment for papillary thyroid cancer; however, I believe that the burden associated with the management of this cancer can be significantly mitigated by further investigation into potentially less invasive pharmacological options. Optimization and expansion of the treatment profile for papillary thyroid carcinoma is more possible than ever before given our continually growing knowledge of the interplay between molecular and cell biology.*

*INSTRUCTOR'S COMMENT: Lucas Hallman's final literature review for UWP 102B asks a timely question about the impact of expanding diagnostic capabilities in medicine. When he began researching the topic, Lucas wanted to explore current treatments for thyroid cancer, but soon discovered that there was a greater question of whether the very tools that have helped diagnose papillary thyroid carcinoma may also have led to overdiagnosis and possibly unnecessary treatment.*

*Throughout the term, Lucas was willing to be flexible with his initial interest and go where the literature led, including researching the history of diagnostics for thyroid cancer and changes in treatment over time. Doing that required many extra hours researching, reading articles, and revising, but the outcome was worth it. Lucas has written a strong, clear review that is a great example of what happens when writers dive into the process of researching and writing.*

—Amy Goodman-Bide, University Writing Program

## **Abstract**

Widespread public fear was the result of a dramatic increase in thyroid cancer incidence initially documented in the early 1990s. The response in many developed countries was the implementation of extensive thyroid cancer screening programs without consideration of the potential for overdiagnosis. Overdiagnosis of thyroid cancer is of particular concern because the treatment often involves surgical removal of the thyroid gland, which carries the risk of complications. In cases of low-risk thyroid cancer, this aggressive form of treatment does not adequately reflect the severity of the disease. This review addresses the potential cause for overdiagnosis of thyroid cancer, the adjustments that have been made to diagnosis of the disease, and alternative therapeutics being developed to expand treatment options. There is strong evidence that the advancement of diagnostic capabilities of ultrasound and fine-needle aspiration have uncovered an increasing number of small, indolent papillary thyroid carcinomas. Between 29 and 69 percent of these cancers are caused by mutational activation of the signaling molecule BRAF<sup>V600E</sup> in thyroid papillary cells. This mutation can be identified by performing genetic profiling on a biopsied specimen of a suspicious thyroid nodule. Treatment of patients with BRAF<sup>V600E</sup> positive papillary thyroid cancer without thyroidectomy is increasing in possibility as a greater array of targeted therapeutics are developed. In addition, an assortment of homeopathic medicines are being explored as a means to oppose the onset of malignancy. Risk of overdiagnosis may be reduced as treatment options expand and are tailored to the specific histology of each thyroid cancer.

## **Introduction**

Thyroid cancer incidence has rapidly increased over the last few decades and is projected to be the fourth most common cancer in the world by 2030 (Jegerlehner et al., 2017). The increase in incidence is primarily attributed to diagnoses of papillary thyroid carcinoma (PTC). PTC is the least aggressive and often indolent histologic subtype of thyroid cancer (Raue & Frank-Raue, 2016). The overdiagnosis of PTC is a possibility because many patients with this low-risk disease will opt to undergo unnecessary, high-risk thyroidectomies (Haymart et al., 2019). In order to mitigate the damage associated with overdiagnosis, researchers are searching for the underlying cause of the increase in PTC incidence. Empirical evidence has supported the hypothesis that the cause is the enhanced ability of diagnostic capabilities to detect PTC (Haymart et al., 2019, and Nagar et al., 2014). These diagnostic technologies, which include ultrasound paired with fine-needle aspiration (FNA), were clinically standardized only as recently as the early 1990s (Nagar et al., 2014). This timing is consistent with the time frame in which thyroid cancer incidence began to rise sharply. In response to this knowledge, the American Thyroid Association has adjusted diagnostic criteria for PTC to safely address the growing number of new cases (Haugen et al., 2016). Molecular profiling of PTC is now widely used in clinical practice due to recent discoveries into the genetic mutations that cause the disease (Raue & Frank-Raue, 2016). The specific mutations that are uncovered can be treated with novel targeted pharmaceuticals and homeopathic medications. These emergent treatment options have the potential to reduce the psychological, financial, and physical burden associated with a PTC diagnosis. In this review, I will explain how PTC is being overdiagnosed, the refinements being made to the diagnostic criteria and diagnosis, and the potential of new treatment options.

## **Evidence and implications of overdiagnosis**

In their 1933 article, Black and Welch correctly predicted that the increased use of diagnostic imaging would result in the overdiagnosis of thyroid cancer (Schnadig, 2018). Schnadig defines overdiagnosis as the detection of a medical condition that is essentially harmless. In their analysis of thyroid cancer registry data from Switzerland between 1998–2012, Jegerlehner et al. (2017) found that the increase in the incidence

rate of thyroid cancer was essentially attributable to diagnoses of PTC. PTC carries an excellent prognosis with a 95 percent survival rate after thirty-five years (Raue & Frank-Raue, 2016). As a result, Jegerlehner et al. (2017) concluded that the population of Switzerland is at serious risk for thyroid cancer overdiagnosis because PTC incidence rates increased concurrently with thyroidectomy rates. Similar findings were reported in countries where intensive thyroid cancer screening programs were established in the 1990s (Schnadig, 2018).

Researchers have conducted several experiments to confirm whether thyroid cancer overdiagnosis is the result of the increased detection of small, indolent PTCs using enhanced diagnostic capabilities. Haymart et al. (2019) explored the use of ultrasound as the initial imaging test for thyroid cancer in the elderly (>65 years) U.S. population. Selection of this demographic was appropriate because it has seen the greatest increase in incidence and has the most disease-associated risks. It was found that the rate of thyroid ultrasound as initial imaging increased 20.9 percent per year between 2002 and 2013 and that thyroid cancer incidence and use of diagnostic ultrasound were significantly associated in this population (Haymart et al., 2019). In another retrospective study, Nagar et al. (2014), used physician age as a surrogate to test the relationship between increased incidence and use of ultrasound with FNA. In the late 2000s, younger physicians (<35 years) would have trained well after the popularization of ultrasound with FNA and would use these tools extensively in practice. On the other hand, older physicians (>55 years) trained well before the addition of these powerful diagnostic tools and would rely on palpation to diagnose thyroid cancer. Nagar et al. (2014) determined that areas with higher concentrations of younger physicians had significantly higher rates of thyroid cancer incidence between 2006 and 2009. This led Nagar et al. to arrive at a similar conclusion as that of the experiment conducted by Haymart et al. (2019). The results of these experiments support the findings of Jegerlehner et al. (2017) and support the claim that overdiagnosis is the result of increasing diagnostic capabilities.

Takano (2020) addresses the “epidemic of fear” that resulted from the extensive use of ultrasound with FNA to screen for PTC. Many people who are unaware of thyroid cancer overdiagnosis and scared by news of increased incidence opt to undergo screening. A portion of patients who receive a PTC diagnosis go on to have a thyroidectomy

when it may not be necessary. Those who do have a thyroidectomy run the risk of facing complications such as infection, bleeding, recurrent laryngeal nerve damage, and secondary hypoparathyroidism (Rosato et al., 2004). As an increasing number of patients receive a PTC diagnosis, it becomes more important to refine diagnostics and optimize treatments to reduce the burden of disease.

## **Refinement to the diagnostic criteria using molecular profiling**

In response to the increasing incidence of PTC and scientific advancements, the American Thyroid Association updated the management guidelines for adult patients with thyroid nodules and differentiated thyroid cancer (which is primarily PTC) in 2015 (Haugen et al., 2016). These guidelines expressly state that a goal is to minimize the harm associated with overdiagnosis of low-risk thyroid cancer while offering the optimal treatment for those with high-risk thyroid cancer. It is recommended that samples collected by FNA are tested according to the Bethesda System for Reporting Thyroid Cytopathology. The Bethesda system has the capacity in 89–95 percent of cases to reveal whether a suspicious thyroid nodule is benign or malignant. If malignancy is detected, further analysis can be done to test for specific genetic mutations (Raue & Frank-Raue, 2016). The ability to test for mutational changes specific to certain subtypes of PTC gives researchers the opportunity to develop individualized therapies.

## **Development of individualized therapies expands treatment options**

Over the past two decades, research has elucidated many of the molecular drivers responsible for the development of thyroid cancer (Raue & Frank-Raue, 2016). Mutational activation of the mitogen-activated protein kinase (MAPK) pathway has been implicated as the main driver of PTC (Naoum et al., 2018). A mutation in BRAF<sup>V600E</sup>, a signaling molecule within the MAPK pathway, is present in 29 to 69 percent of PTC cases (White et al., 2017). PTC that carry this mutation are more prone to metastasis, are more likely to develop resistance to radioactive iodine (RAI) treatment, and have a higher mortality rate (Brose et al., 2016). The multiple-kinase inhibitor (MKI) vemurafenib, which

specifically targets BRAF<sup>V600E</sup>, was initially used in the management of BRAF<sup>V600E</sup> positive melanoma. Brose et al. conducted a clinical trial of vemurafenib treatment on primarily U.S. patients with metastatic PTC that is both BRAF<sup>V600E</sup> positive and RAI-refractory. After a 14.4-month treatment course, 73 percent of the twenty-six patients who had not received prior MKI treatment had achieved disease control with a median progression-free survival of 18.2 months. Based on these results, Brose et al. (2016) concluded that vemurafenib may represent a potentially effective treatment for these patients.

Use of vemurafenib paired with dabrafenib has shown promise in the treatment of patients with BRAF<sup>V600E</sup>-positive PTC, but the onset of drug resistance and adverse effects limit long-term efficacy (White et al., 2017). It was found that continuous treatment with vemurafenib induced dependence of resistant cells on this drug to continue proliferation. In response to this discovery, new trials were arranged where dabrafenib dosing was intermittent and done in conjunction with another MKI called trametinib. White et al. (2017) performed a case study on two patients with RAI-refractory, BRAF<sup>V600E</sup>-positive PTC that underwent this treatment course. It was reported that intermittent dosing of dabrafenib with trametinib was both more well-tolerated than continuous dosing and stabilized cancer progression over twenty-seven months. This is one example of clinical research in this field that builds upon that done prior. As more research into mutation-specific treatments is performed, the effectiveness and safety of these drugs will continue to improve.

## **Homeopathic options may further improve outcomes**

Alternative treatments in development for patients with PTC are not limited to pharmaceuticals. Homeopathic options are being explored that exploit nature's ability to manufacture organic compounds capable of serving a medicinal role. One example is curcumin, a naturally occurring polyphenol found in the common household spice turmeric (Zhang et al., 2018). Curcumin is capable of inducing apoptosis in PTC cells. Zhang et al. (2018) conducted an experiment in order to determine the mechanism of this action. They determined that curcumin disrupts calcium homeostasis in PTC cells by inducing endoplasmic reticulum stress that triggers the release of stored calcium ions into the cytosol. The result is depolarization of the mitochondrial membrane, which prevents

the production of adenosine triphosphate (an organic compound that provides energy) and ultimately leads to cell death. Other tannins have the ability to promote PTC cell apoptosis as well (Yang et al., 2020). Epigallocatechin-3-gallate, commonly found in tea, inhibits PTC cell proliferation and induces apoptosis. Punicalagin extracted from pomegranates has a similar effect. Patients have easy access to these affordable organic compounds, which makes them very promising potential supplements to the prevention and treatment of PTC.

## **Conclusion**

Overdiagnosis of thyroid cancer is a self-perpetuating issue in that concerns about increased incidence motivates more people to undergo thyroid ultrasound, which in turn leads to additional new diagnoses. Currently, there is no significant evidence to suggest that the incidence rate will level off or decline. As such, it is exceedingly important that researchers and clinicians continue to refine diagnostic criteria and treatment options for patients with PTC. The exact mechanism of PTC development has been detailed by research over the last two decades. These discoveries increase the possibility of broadening the scope of treatment options for PTC beyond the standard thyroidectomy. Targeted therapies specific to molecular drivers of PTC are in development and clinical trials continue to enhance their efficacy. The ability of naturally derived compounds to combat PTC development represents another method to supplement treatment. The expansion of treatment options affords patients diagnosed with PTC greater freedom to decide how they want to approach disease management. In addition, the availability of increasingly individualized therapies aids in the reduction of the risks associated with enhanced detection of low-risk thyroid cancers.

## References

- Brose, M. S., Cabanillas, M. E., Cohen, E. E. W., Wirth, L. J., Riehl, T., Yue, H., Sherman, S. I., & Sherman, E. J. (2016). Vemurafenib in patients with BRAF<sup>V600E</sup>-positive metastatic or unresectable papillary thyroid cancer refractory to radioactive iodine: a non-randomised, multicentre, open-label, phase 2 trial. *The Lancet Oncology*, *17*(9), 1272–1282. doi.org/10.1016/S1470-2045(16)30166-8
- Haugen, B. R., Alexander, E. K., Bible, K. C., Doherty, G. M., Mandel, S. J., Nikiforov, Y. E., Pacini, F., Randolph, G. W., Sawka, A. M., Schlumberger, M., Schuff, K. G., Sherman, S. I., Sosa, J. A., Steward, D. L., Tuttle, R. M., & Wartofsky, L. (2016). 2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer: The American Thyroid Association Guidelines Task Force on Thyroid Nodules and Differentiated Thyroid Cancer. *Thyroid*, *26*(1), 1–133. doi.org/10.1089/thy.2015.0020
- Haymart, M. R., Banerjee, M., Reyes-Gastelum, D., Caoili, E., & Norton, E. C. (2019) Thyroid Ultrasound and the Increase in Diagnosis of Low-Risk Thyroid Cancer. *The Journal of Clinical Endocrinology & Metabolism*, *104*(3), 785–792. doi.org/10.1210/jc.2018-01933
- Jegerlehner, S., Bulliard, J-L., Aujesky, D., Rodondi, N., Germann, S., Konzelmann, I., Chioloro, A., & NICER Working Group (2017). Overdiagnosis and overtreatment of thyroid cancer: A population-based temporal trend study. *PLOS ONE*, *12*(6). doi.org/10.1371/journal.pone.0179387
- Nagar, S., Aschebrook-Kilfoy, B., Kaplan, E.L., Angelos, P., & Grogan, R. H. (2014) Age of diagnosing physician impacts the incidence of thyroid cancer in a population. *Cancer Causes & Control*, *25*(12), 11627–1634. www.jstor.org/stable/24717097
- Naoum, G. E., Morkos, M., Kim, B., & Arafat, W. (2018). Novel targeted therapies and immunotherapy for advanced thyroid cancers. *Molecular Cancer*, *17*(51). doi.org/10.1186/s12943-018-0786-0

- Raue, F., & Frank-Raue, K. (2016). Thyroid Cancer: Risk-Stratified Management and Individualized Therapy. *Clinical Cancer Research*, 22(20), 5012–5021. doi:10.1158/1078-0432.CCR-16-0484. [clincancerres.aacrjournals.org/content/22/20/5012.full-text.pdf](http://clincancerres.aacrjournals.org/content/22/20/5012.full-text.pdf)
- Rosato, L., Avenia, N., Bernante, P., DePalma, M., Gulino, G., Nasi, P., Pelizzo, M. R., & Pezzullo, L. (2004). Complications of Thyroid Surgery: Analysis of a Multicentric Study on 14,934 Patients Operated on in Italy over 5 Years. *World Journal of Surgery*, 28, 271–276. doi.org/10.1007/s00268-003-6903-1
- Schnadig, V. J. (2018). Overdiagnosis of Thyroid Cancer: Is This Not an Ethical Issue for Pathologists As Well As Radiologists and Clinicians? *Archives of Pathology and Laboratory Medicine*, 142(9), 1018–1020. doi.org/10.5858/arpa.2017-0510-ED
- Takano, T. (2020). Overdiagnosis of Juvenile Thyroid Cancer. *European Thyroid Journal*, 9(3): 124–131. doi.org/10.1159/000503323
- White, P. S., Pudusseri, A., Lee, S. L., & Eton, O. (2017). Intermittent Dosing of Dabrafenib and Trametinib in Metastatic BRAF<sup>V600E</sup> Mutated Papillary Thyroid Cancer: Two Case Reports. *Thyroid*, 27(9), 1201–1205. doi.org/10.1089/thy.2017.0106
- Yang, Y., Chen, Q., Yu, W-Y., Zhang H-H., Zhong Y-S., Zhang S-Z., Wang, J-F., & Yu, C-H. (2020). Herbal Active Ingredients: An Emerging Potential for the Prevention and Treatment of Papillary Thyroid Carcinoma, (Nazzel, S.M., editor), *BioMed Research International*. doi.org/10.1155/2020/1340153
- Zhang, L., Cheng, X., Xu, S., Bao, J., & Yu, H. (2018). Curcumin induces endoplasmic reticulum stress-associated apoptosis in human papillary thyroid carcinoma BCPAP cells via disruption of intracellular calcium homeostasis, (Alzghari, S., editor). *Medicine*, 97(24). doi:10.1097/MD.0000000000011095. [journals.lww.com/md-journal/Fulltext/2018/06150/Curcumin\\_induces\\_endoplasmic\\_reticulum.54.aspx](http://journals.lww.com/md-journal/Fulltext/2018/06150/Curcumin_induces_endoplasmic_reticulum.54.aspx)

## SOYBEAN (*Glycine max*): “The Mighty Yellow Bean” – Analysis and Review



ALEXANDER SAKA

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*WRITER'S COMMENT: When I was presented with the prompt, to choose an essential crop from around the world and determine its origination, I knew I wanted to pick something with a rich history, and a deep cultural connection. I remembered reading the mythology of the soybean in Japan, and recognized that was a rabbit hole I had to follow. Being a biologist at heart, the first trail I followed was into genomic analysis and complex trait tracking for the soybean. By this point I knew that the research I wanted to write about the plant needed to be accessible, but uncompromising in scientific accuracy. This plant has had a complex intertwined history with humanity and appears in many different cultures' creation mythology. So I knew I had to do justice to that. Additionally, it reveals some amazing insights into the power humans have over their natural environment, how we have truly shaped the biosphere of our planet in amazing ways. Which belays the warning that we should care for our planet, our home.*

*INSTRUCTOR'S COMMENT: PLB 143 deals with the origins of plant agriculture and the domestication of crop plants. The transition from hunting-gathering to agriculture to procure food and other plant-based products some 10,000 years ago was a significant milestone in human evolution and a necessary precursor to the independent development of civilizations in several parts of the world. How, where, and when this transition took place and what the major changes were in the functionalities of crop plants is the subject of multidisciplinary research presented in this course. To demonstrate they have mastered the topic, students like Alexander Saka write a term paper that summarizes the*

*up-to-date knowledge about domestication and evolution of a crop of their choice. In his search of the origin of soybean, Alexander elegantly describes genetic, archaeological, ecological, and historical information, which lead him to conclude that soybean originated in what is now northern China. My personal thanks to Kimberly Gibson, Teaching Assistant, and Sheena Campbell, Student Services Librarian, for their support of student writing.*

—Paul Gepts, Department of Plant Sciences

## **Abstract:**

The common soybean (*Glycine max*) is one of the world's most useful, widespread, culturally significant, and largest growing cultivations in the world. The primary thread of global soybean history traced a path out of East Asia before spreading across the globe and finding more modern agricultural homes in India, Brazil, Argentina, and the United States. However, despite its global fame, both the origin of the species, and the primary site of domestication in East Asia, are still hotly contested. As a result, an array of scientific, archaeobotanical, and anthropological methods have been used to assess the validity of the most suspected regions. A review of these significant findings and research may help elucidate the history of this mighty yellow bean. While the exact geographical origin of the soybean is currently a mystery, with further research and additional international collaboration, these locations may become less obfuscated.

## **Introduction:**

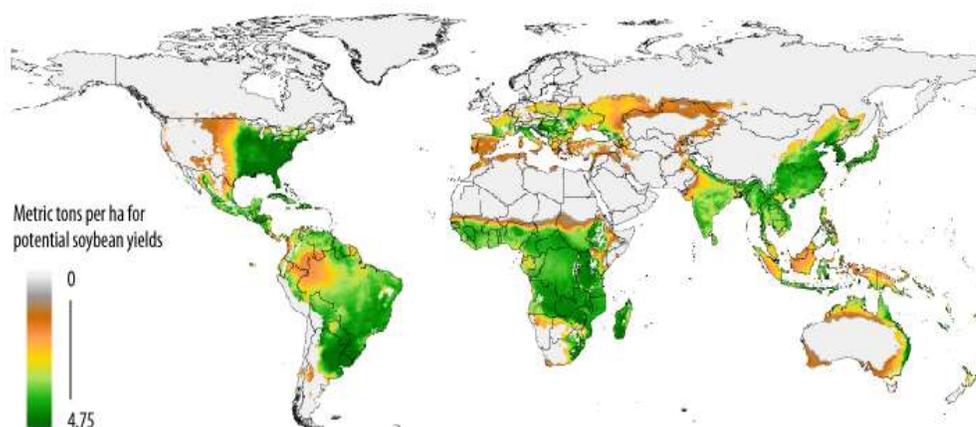
Ōgetsu-hime, the Shinto goddess of food, was detailed to have been slain by the moon god Tsukiyomi, after he was displeased by her gifts. From her body sprouted the first soybean, and so many other culturally foundational plants of Japanese agriculture. <sup>10</sup> Careful to not let her death be in vain, Tsukiyomi's sister, the sun goddess Amaterasu, sewed the crops across the island for humans to enjoy. This tale from the Koji (古事記) or "Record of Ancient Matters," is just one of the many tales of the origin of the soybean that exist across East Asia. Other stories include the divine farmer Shennong retrieving it from the mythological Mount Weishi in China<sup>22</sup> as well as numerous tales in Korea. As shown by these mythic

origins, *Glycine max*, the domesticated soybean, is a crop of singular significance.

Soybean plants stand, on average, three to five feet tall, they are typically verdant green, and each modern, genetically improved plant, on average branches three times<sup>13</sup>. From these branches you can expect around twenty nodes of growth. *G. max* has the observed maximum capacity of six hundred pods, but realistically only produces fifty to a hundred. Each pod normally contains three seeds.<sup>20, 9</sup>

Soybean has a large distribution, with their primary range being located between latitudes of 35–50° degrees, with a secondary range between latitudes of -20 to -40 degrees.<sup>18</sup> Soybean has a strict light requirement of about twelve to thirteen hours a day, of which at least eight hours need to be direct sunlight. Without this they will not flower, and often become prone to diseases like white mold.<sup>12</sup> Despite these seemingly rigorous requirements, the soybean has a distinct advantage over some plants, which allows them to enjoy a wide and global distribution. Like other legumes, soybean plants supply their own nitrogen via fixation of nitrogen in the atmosphere by a symbiotic soil bacterium nestled in their roots.<sup>20</sup> Additionally, when used in crop rotations, soybean can restore nitrogen to the surrounding soil, reducing the need for fertilizers when planting other crops.

Soybean is also an economically crucial crop. They provide 300 million metric tons of food a year, and are responsible for nearly 100 billion U.S. dollars worth of annual revenue.<sup>4</sup> Soybean is used as an



**Figure 1.** Retrieved from the International Food Policy Research Institution. This image displays the global potential suitable land for Soy. Areas have been stained with blue to distinguish current ranges according to FOASTAT ranges. Most arable land supports soy production, but yield is restricted by above mentioned factors.

ingredient in the formulation of a multitude of food, feed and industrial products.<sup>21</sup> There is a large and expanding range of different soyfoods, soy seed cooking oil, growing biodiesel applications, industrial farming uses as feed, as well as uses of vegetable protein substitutes for meat and dairy. Furthermore, soy food products have made more nutrients available to the economically disadvantaged in local markets by being “a primary source of high-value secondary co-products such as lecithin, vitamins, nutraceuticals and antioxidants.”<sup>3, 21</sup> However, due to lack of genetic variation in the known modern cultivars, there has been somewhat of a plateau of global yield, even shrinking from 2018 to 2019.<sup>26, 21, 4</sup>

While the soybean has high current and future global distribution as seen in Figure 1, soybean origin and center of domestication research has been extensive and often conflicting. This is further complicated and compounded by the cultural importance of soy to China, South Korea, and Japan, as illustrated by the origin stories provided earlier. As a result, there is also a political interest in being able to say that one nation is the center of domestication as well as the birthplace for the crop.

## **Results and Discussion:**

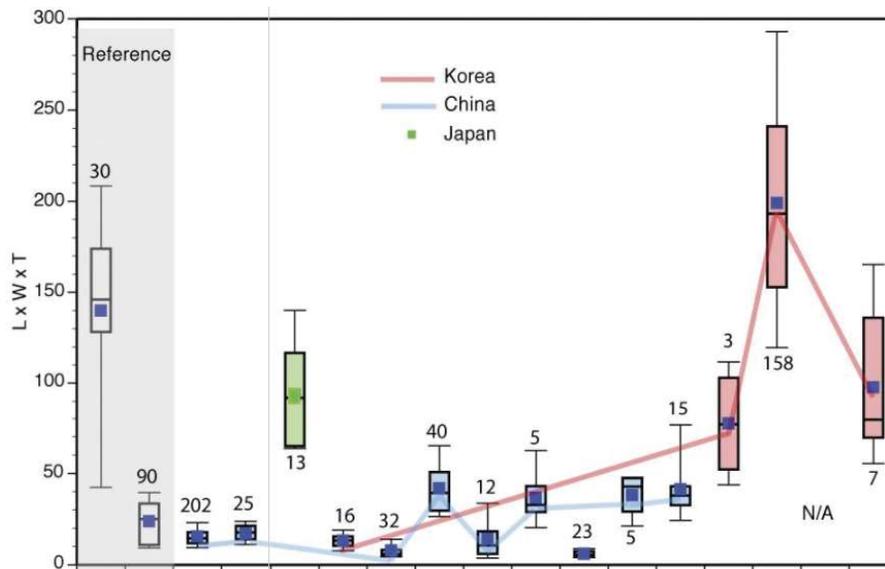
### **China, Korea, Japan; Understanding Trait Migration**

In order to understand and narrow down the sites of origin, study of soybean phenotypes in these three countries can help trace the migration of soy. A key element of the domestication syndrome (the ensemble of traits that distinguish a crop from its wild ancestor) is the increased size of the yield from the plant,<sup>6</sup> particularly the seeds in plants in which the seed is the primary element of human consumption. These favorable traits are known as domestication related traits (DRTs).<sup>14</sup> In the case of the domestication of *Glycine max*, DRTs related to bean dimensions are a critical area for research. DRTs present in *Glycine max* are unique due to their loci positions being compressed. A study done by researchers from the Laboratory of Plant Genetics and Evolution in Japan used quantitative trait locus mapping to identify genotypic coalescence across loci.<sup>15</sup> They found that across twenty linkage groups, DRTs had a tendency to be clustered across just six. But since these regions were not clustered themselves, the introgression of useful genes was less hindered.<sup>15</sup>

Data collected from China, Korea, and Japan was analyzed in a study by dimensions (length and width), in order to track the progression of these DRTs, and hence their migration patterns.<sup>14</sup> This study of soy

length and width was done across cultural eras in these three countries. Within this study, two main varieties were discovered: a more wild and weedy variety and the modern domesticate. Soybean had been collected from numerous other researchers, and data from other relevant research in question was used when direct observation of samples was not possible. They found that the earliest recovered *Glycine max* was present in the early Neolithic period in China (9000–8600 B.P.). Samples were recovered that spanned a large period of time. Figure 2 demonstrates their results when length, width, and time are considered. We can see a distinct increase over time in the dimensions of the seeds, which increases the confidence in the assumption that seed size is a DRT through integration. We also observe that the Chinese samples on a whole were smaller than the Korean samples, which were smaller in turn compared to the Japanese variety.<sup>14</sup> This suggests that as the larger crop varieties are preferred by humans, those would be the crops traded, effectively functioning as a genetic bottleneck by increasing the standard size threshold in the locations they arrive in.<sup>17</sup> This evidence points to the conclusion that China is likely the center of domestication, as seed size was likely much smaller when it was originally cultivated, as is similar to other legumes which have other DRT that are affected by domestication first.<sup>5</sup>

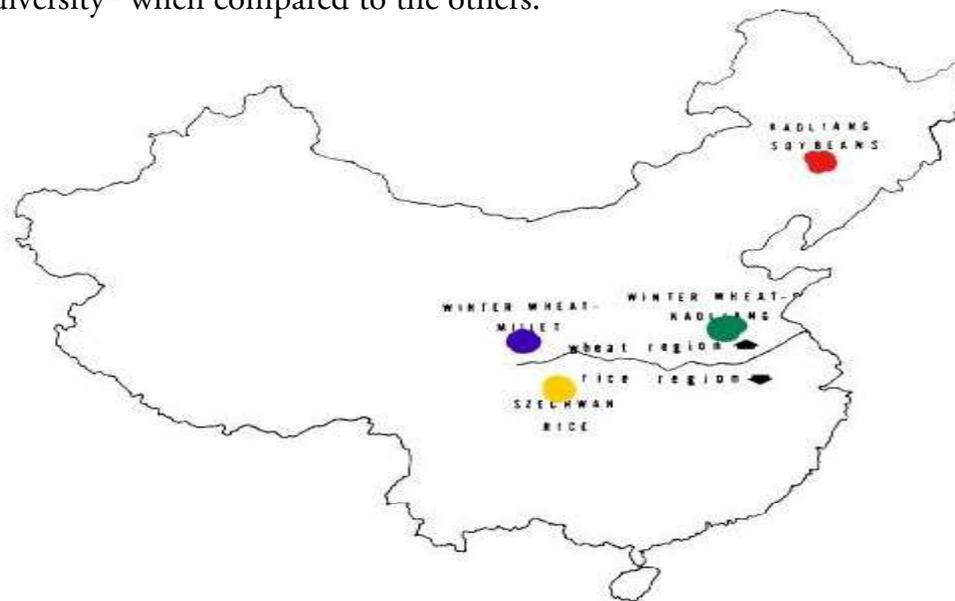
### The Four Chinas Agricultural Origin Concept:



**Figure 2:** Retrieved from Lee et al. (2011). This graph displays comparisons of length and width over time. China is indicated in blue, Korea in red, and Japan in green. Limited Japanese samples result in decreased confidence. This graph evidences the idea that earlier found samples also were the smallest, and all belonged to China, suggesting that is the region with earliest domestication.

Key historical research done in 1975 placed the domesticated soybean's introduction to mainland China, and soon the rest of the world, to have taken place in the northeastern regions of China around 500 B.C.E.<sup>4</sup> In fact, it was speculated that soybean domestication was associated with the agricultural revolution in the Eastern Zhou Dynasty.<sup>10</sup> However, soybean is known to grow throughout China. With production being localized across four primary regions: the kaoliang-soybean region (Northeast China), the winter wheat-kaoliang region (Central China), the winter wheat-millet region (Eastern China), and the Szechwan rice region (South-Central China).<sup>5</sup> Additionally, the earliest appearance of soybean samples in the Kaoliang-soybean region are around 2000 B.C.E.,<sup>24</sup> which suggests that they were not domesticated there originally or had independent origin, as other samples from other regions were dated to be older. This is also somewhat supported by loci analysis performed in 2016, which discovered that soybean often has distinct regional traits.<sup>26</sup> Charred soybean specimens place the Huang-Huai basin (South of the winter wheat-Kaoliang) region as older than the Northeast regions.<sup>19</sup>

Additionally, phylogenetic and nucleotide diversity studies have shown that the Huang-Huai basin region has the highest observed diversity<sup>7</sup> when compared to the others.



**FIG. 3.** The major soybean regions in mainland China.

**Figure 3.** Retrieved from Hymowitz (1970). This map displays the prospective regions of the origin of soybean domestication. The kaoliang-soybean region is denoted in red, the winter wheat-kaoliang region in green, the winter wheat-millet region in blue, and the Szechwan rice region in yellow.

This fits into Vavilov’s method for finding the origin of a cultivated plant, as the most diverse area is likely the center of domestication. Furthermore, gene flow studies on *G. soja* and *G. gracilis* have shown that the flow of genetic material was passed from *G. soja* to *G. gracilis* before being passed to *G. max*.<sup>8</sup> This provided the insight that in the Huang-Huai basin, domesticated *G. max* had more genetic and phenotypic introgression from the wildtype than any other samples from other regions. This counters the claim of independent origin. The same loci analysis demonstrated that region specific traits also discovered with the use of principal component analysis (PCA) there were two main clades, in which the domesticated clade was shown to have lost 50 percent of its diversity.<sup>26</sup> This PCA suggests that a single domestication event likely occurred.



**Figure 4.** “Shu” It is also of note that the archaic Chinese character for soybean, “Shu,” has also had its origins traced separately from the plant. This pictograph has been broken down into 4 components, the middle line represents the plant, the upper and lower vertical lines represent the stem and roots respectively, with the three lines at the bottom signifying the root nodules, a very distinctive characteristic of soy plant<sup>11</sup> and other legumes because they harbor the nitrogen-fixing bacteria mentioned earlier. This symbol is particularly useful as its origin is found in the “Book of Odes,” a text whose relevance spans 1200–900 B.P. and was discovered in the geological area of the winter wheat-kaoliang region.<sup>11</sup> Furthermore, the dating of the text also illuminates the usage of the word and character itself was developed in and around 1100 B.P.<sup>2</sup> Further morphological evidence has also been compiled, particularly with pod dehiscence. A study was conducted that tracked the concurrence of pod dehiscence with relative humidity of the environment in which they grew. *Pdh1*, the gene controlling pod dehiscence—an essential trait of soybean—only occurs in the Huang-Huai basin and originates in the wild progenitor species *G. Joja*.<sup>23</sup>

## A Common Domestication, Uncommon Origin:

The suggested domestication origin of the common soybean seems most likely to be in the Huang-Huai basin. Specimens found at a Late Yangshao site near to the Huang-Huai basin were recovered from the floor

of an ancient house; these are the earliest found in this region, however due to natural conditions of flooding and sun exposure, no earlier samples have been discovered.<sup>14</sup> While much evidence has been lost from this region, this seems to be the most likely origin of domestication in China. Which consequently would mean it is likely the origin in all of Asia and possibly the world. However, there are still complications to this theory. Namely, the common traits that track wild varieties of *G. soja* across Asia, which support the idea that at least partial domestication occurred in many sites across central and Northeast China. Which is supported further by the similar domestication track across at least two dozen other species of legumes.<sup>1</sup> This information likely makes the actual origin of the soybean impossible to discover with current technology and methods. However, with the current understanding and evidence we have, a common domestication of the soybean can be placed, likely just below the Yellow River, in the Huang-Huai basin between 7000 to 3000 years ago.

### **Recommended Lines of Future Research:**

There were several problems present when analyzing the topic of the origin and domestication of the soybean, most of them had to do with the quality and quantity of evidence available. Numerous accounts and papers have revealed that the Huang-Huai basin is prone to both flooding and mudslides. This has two main negative effects: the destruction of evidence, as well as the movement of evidence away from its site of origin.<sup>24</sup> Further digs are most likely needed, preferably accounting for the potential movement of the specimens; however, this would require significant analysis and effort.

International collaboration is needed in order to better understand the evidence we do currently have. Many nations have evidence, and collaboration between more teams of researchers would benefit the study of the plant. In numerous studies, it is mentioned that a limitation is the researcher's lack of access to the actual specimens for two main reasons: the inability to facilitate collaboration with the previous team or the destruction of the pieces due to the distance in time from the original study. These are major hurdles that can be rectified by a singular, larger, and more inclusive study. Further studies should seek temporary access to the specimens collected by other institutions to perform experiments with a larger and more diverse sample size. Additionally,

biases may be observed when it comes to the nation of origin of the studies, as each nation has a somewhat-vested interest in being able to claim the origination/domestication of *G. max*.

Another option that would not require access to the specimens, however, would be further research of the occurrence of vocabulary to do with soybean in the different regions of China. This could help place our marker for where and, more specifically, when the domestication may have occurred.

Finally, the use of more modern techniques by new studies would also benefit the discovery of the topic. Many published pieces about the origin and domestication of the soybean are not recent, some of which even occurred nearly a century ago, before the advent of mass spectrometry and genetic sequencing. Many of the samples have not been dated beyond their discovery in a site from a particular age. Further techniques like C14 dating could be employed to attempt to find a more accurate assessment of the age of certain samples. Overall, more collaboration and up-to-date methods need to be applied going forward to help clear up the crop origination of this mighty yellow bean.

## References

1. Cannon, S. B., & Shoemaker, R. C. (2012). Evolutionary and comparative analyses of the soybean genome. *Breeding Science*, *61*(5), 437–444. doi.org/10.1270/jsbbs.61.437
2. Dobson, W. A. C. H. (1996). *The Language of the Book of Songs*. University of Toronto Press.
3. Du Bois, C. M. (2018). *The Story of Soy*. London: Reaktion Books.
4. Food and Agriculture Organization of the United Nations. (2021, March 8). *Value of Agricultural Production*. FAOSTAT. www.fao.org/faostat/en/#data/QV/visualize
5. Fuller, D. Q. (2007). Contrasting Patterns in Crop Domestication and Domestication Rates: Recent Archaeobotanical Insights from the Old World. *Annals of Botany*, *100*(5), 903–924. doi.org/10.1093/aob/mcm048
6. Gepts, Paul. (2004). Crop Domestication as a Long-Term Selection Experiment. In Janick, J. (Eds.), *Plant Breeding Reviews, Part 2: Long-Term Selection: Crops, Animals, and Bacteria*, (24)2, pp. 1–44. John Wiley and Sons, Inc. psfaculty.plantsciences.ucdavis.edu/gepts/LTS.pdf
7. Guo, J., Wang, Y., Song, C., Zhou, J., Qiu, L., Huang, H., Wang, Y. (2010). A single origin and moderate bottleneck during domestication of soybean (*Glycine max*): implications from microsatellites and nucleotide sequences. *Annals of Botany*, *106*(3), 505–514. doi.org/10.1093/aob/mcq125
8. Han, Y., Zhao, X., Liu, D., Li, Y., Lightfoot, D. A., Yang, Z., Zhao, L., Zhou, G., Wang, Z., Huang, L., Zhang, Z., Qiu, L., Zheng, H., & Li, W. (2015). Domestication footprints anchor genomic regions of agronomic importance in soybeans. *New Phytologist*, *209*(2), 871–884. doi.org/10.1111/nph.13626
9. North Carolina Soybean Production Association. (Year, month day). *History of Soybeans*. North Carolina Soybeans. ncoy.org/media-resources/history-of-soybeans/
10. Ho, P-t. (1975). *The cradle of the East: An inquiry into the indigenous origins of techniques and ideas of Neolithic and early historic China*,

5000-1000 B.C. University of Chicago Press.

11. Hymowitz, T. (1970). On the Domestication of the Soybean. *Economic Botany*, 24(4), 408–421. doi.org/10.1007/BF02860745
12. Jardine, D. J. (2020, July 1). *White Mold - Soybean Disease*. Soybean Research & Information Network. soybeanresearchinfo.com/soybean-disease/white-mold/
13. Kuswanto, H., Indriani, F. C., Patriawaty, N. R., Sulisty, A., Han, W. Y., Lee, P. Y., Cho, Y. H., & Baek, I. Y. (2014). Performance of Acid-Adaptive Soybean Expected Lines in South Lampung, Indonesia. *AGRIVITA Journal of Agricultural Science*, 36(2), 160–166. agrivita.ub.ac.id/index.php/agrivita/article/view/400/503
14. Lee, G-A., Crawford, G.W., Liu, L., Sasaki, Y., & Chen, X. (2011). Archaeological Soybean (*Glycine Max*) in East Asia: Does Size Matter? *PLoS ONE*, 6(11), Article e26720. doi.org/10.1371/journal.pone.0026720
15. Liu, B., Fujita, T., Yan, Z. H., Sakamoto, S., Xu, D., & Abe, J. (2007). QTL Mapping of Domestication-related Traits in Soybean (*Glycine max*). *Annals of Botany*, 100(5), 1027–1038. doi.org/10.1093/aob/mcm149
16. Philippi, D. L. (1969). Chapter 18. In *Kojiki*. (Trans.). University of Tokyo Press. www1.udel.edu/History-old/figal/Hist138/Text/er/kojiki.pdf
17. Piper, C. V., & Morse, W. J. (1943). *The Soybean*. Peter Smith Publishers.
18. Scurek, O. (2006, April 15). *Glycine Max: Distribution and Climate*. Glycine Max-Soybeans, bioweb.uwlax.edu/bio203/s2009/scurek\_oliv/Habitat.htm
19. Sedivy, E. J., Wu, F., & Hanzawa, Y. (2017). Soybean Domestication: the Origin, Genetic Architecture and Molecular Bases. *New Phytologist*, 214(2), 539–553. doi.org/10.1111/nph.14418
20. Stowe, K. D., & Dunphy, J. (2017). The Soybean Plant. In *North Carolina Soybean Production Guide* (pp. 3–10). NC State Extension Publications. content.ces.ncsu.edu/north-carolina-soybean-production-guide/the-soybean-plant

21. Wilson, R. F. (2008). Soybean: Market Driven Research Needs. In *Genetics and Genomics of Soybean* (pp. 3–15). Springer. doi.org/10.1007/978-0-387-72299-3\_1
22. Yang, L., An, D., & Turner, J. A. (2008). *Handbook of Chinese Mythology*. Oxford University Press. p. 197. [img.fireden.net/tg/image/1560/73/1560731269210.pdf](http://img.fireden.net/tg/image/1560/73/1560731269210.pdf)
23. Zhang, J., & Singh, A. K. (2020) Genetic Control and Geo-Climate Adaptation of Pod Dehiscence Provide Novel Insights into Soybean Domestication. *G3: Genes, Genomes, Genetics*, 110(2), 545–554.
24. Zhao, H., Huang, C. C., Zheng, Z., Hu., Y., Zhang, Y., Guoa, Y., & Zhou, Q. (2017). New Evidence for the Catastrophic Demise of a Prehistoric Settlement (the Lajia Ruins) in the Guanting Basin, Upper Yellow River, NW China. *Journal of Asian Earth Sciences*, 146, 134–141. doi.org/10.1016/j.jseaes.2017.05.019
25. Zhao, Z. (2005). Discussion of the Xinglonggou site flotation results and the origin of dry farming in northern China. In *Antiquities of Eastern Asia, A*, 188–199.
26. Zhou, Z., Jiang, Y., Wang, Z., Gou, Z., Lyu, J., Li, W., Yu, Y., Shu, L., Zhao, Y., Ma, Y., Fang, C., Shen, Y., Liu, T., Li, C., Li, Q., Wu, M., Wang, M., Wu, Y., Dong, Y. ... Zhixi T. (2015). Resequencing 302 wild and cultivated accessions identifies genes related to domestication and improvement in soybean. *Nature Biotechnology*, 33(4) 408–414. doi.org/10.1038/nbt.3096

# Capsid Morphologies and Predominant Morphotypes in Viruses of Halophilic and Thermophilic Archaea



EESHA GUPTE

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*WRITERS' COMMENT: I remember that on the first day of UWP 102B, Dr. Carpenter stated a universally true fact: “writing is hard.” But at the same time, he continually emphasized that the most challenging aspect of being a scientist is not conducting the research itself, but instead it is communicating the information to the target audience. So, when the time came for us to draft our review papers, my goal was to choose a topic that thoroughly excites me and then to translate this excitement into a paper in a way that is accessible to all my peers. Growing up being interested in space fiction, astrobiology, which is the study of living organisms in space, was an obvious choice for me. But as I delved deeper, I came across the term “astrovirology” and noticed that viruses are almost completely disregarded in the search for life in space. Consequently, I decided to write about the biosignatures specific to viruses that we can look for to find out if these strange little creatures do indeed exist in space.*

*INSTRUCTOR'S COMMENT: Winter Quarter 2021 was a difficult quarter for students and instructors alike. We celebrated the one-year anniversary of being in Covid lockdown and even the strongest of us were starting to bend a bit under the compound stressors of online learning and doing literally anything else during the pandemic. In her end-of-the-quarter reflection on the things she learned in this course, Eesha said that “the most useful tip [she] learned was that it is better to start somewhere than to not start at all.” She continued, “Once you start writing and or annotating, it is very convenient to build slowly on*

*that foundation.” There is a lesson there for all of us: often the hardest part of a task is starting. Once you get the ball rolling, it is easier to keep it moving along, adding, massaging, condensing as you go. Sometimes, in very complex topics, the author can get “lost in the sauce” and lose sight of their goal—in this case, to help a scientifically literate audience understand the intricate relationships between virus morphology (how they are built) and their genetic makeup. By building this knowledge, Eesha believes, we can glean vital information about the origin of viruses on Earth. From there, it is possible that we can develop a biomarker for identifying the presence of viruses in extraterrestrial habitats. During one of our office-hours chats, Eesha talked to me about astrobiology—her passion for the field, for space exploration and the importance of learning about the things that we don’t even know we don’t know. This paper is an excellent example of how Eesha worked to engage her audience with the unknown, then worked to illustrate how we can use genetics and virus morphology on Earth to help us better understand how life could be flourishing on other planets.*

*Thus, I encourage you, dear reader, to take a bit of advice from Eesha Gupte, no matter how difficult something may seem, it is better to start somewhere than to not start at all. You never know how far that simple start may end up taking you.*

*—Russ Carpenter, University Writing Program*

## **Abstract**

Viruses are abundant life forms and have been involved in the process of evolution of cellular life on Earth. Nevertheless, they are largely ignored by astrobiologists in the search for life in outer space, and consequently no valid virus biosignatures have been identified. This review describes the potential of virus capsid morphology as a biosignature to be used in future missions by examining the commonality of morphotypes in viruses of halophilic and thermophilic archaea and also addresses the influence of environmental factors, genetics, and host on these morphologies. After surveying multiple studies that describe newly discovered viruses of our interest, it was found that in hypersaline environments, most frequently

observed morphotypes are spindle-shaped, pleomorphic, head-tailed, and spherical. In regions with high temperature and acidity filamentous and spindle-shaped morphotypes but also other unique morphotypes are found. While study of some of these indicates that viruses require a cellular host to exist, study of others suggests that viruses evolved before or concurrently with cellular life on Earth. Though this provides a better insight about the origin of life on Earth, current research on viruses of haloarchaea and thermophilic archaea is limited. Therefore, more research is required to identify how genetics, environment, and hosts affect virus capsid morphology and whether it can be used as a viable virus biosignature in the future.

**Keywords:** Virus, Capsid, Morphology, Archaea, Halophilic, Thermophilic

## **Introduction**

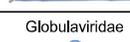
Astrobiology is a multidisciplinary field, and one of its objectives is to find life in outer space. This is done by sending rovers to other planets to look for predetermined biosignatures such as nucleic acids and membrane lipids that are commonly found in all cellular life on Earth. Viruses are the most abundant life forms on Earth—estimated extracellular viruses called virions (Breitbart & Rohwer, 2005)—but are greatly ignored by astrobiologists, and subsequently no valid virus biosignatures have been identified. However, viruses are hypothesized to be crucial in the process of origin and evolution of life on Earth (Koonin et al., 2006). Therefore, it is necessary to identify structures that are common throughout most of the virus population on Earth and can potentially be used as a virus biosignature for future missions.

The significant genetic diversity within viruses and ambiguity regarding their origin and evolution is a major challenge in this process. Nevertheless, the virus capsid morphology is highly conserved despite some notable exceptions (Berliner et al., 2018). Hence, this review will examine the potential of the most common viral capsid morphologies as a biosignature and whether these are influenced by genetics, environmental factors, and hosts. The focus will be on viruses of halophilic and thermophilic archaea since extreme environments are common in outer space and most extremophile hosts on Earth tend to be archaea (Rampelotto, 2013).

## 1. Virion Structure and Common Morphotypes

A virion is commonly made up of a protein capsid and enclosed genetic material. The genetic material can either be circular or linear and can either comprise single-stranded DNA (ssDNA), double-stranded DNA (dsDNA), or RNA. Since the genome of a virus is extremely small, it encodes only a few types of proteins, out of which some are repeated to form the capsid and are called capsomeres. These capsomeres can assemble in various ways and give rise to the different capsid morphologies which are grouped into multiple morphotypes [see Figure 1]. Most often, helical arrangement of the capsomeres gives rise to long, filamentous viruses, whereas polyhedral arrangement of the capsomere gives rise to icosahedral viruses (Norrby, 1983).

In addition to these morphotypes, there also exist more complex capsid morphotypes, such as pleomorphic haloarchaeal viruses [see

Viral Morphology	Family	Host Species	Notable References
Spindle	 Fuselloviridae	<i>Sulfolobus</i> , <i>Acidianus</i> , <i>Haloarcula</i> , <i>Pyrococcus</i> , <i>Aeropyrum</i> , <i>Stygiolobus</i> and <i>Thermococcus</i>	Krupovic et al. 2014
	 Bicaudoviridae	<i>Acidianus</i>	Haring et al. 2005b
	 Spiraviridae	<i>Aeropyrum</i>	Mochizuki et al. 2012
Spherical	 "Halospaerovirus"	<i>Haloarcula</i> and <i>Halorubrum</i>	Luk et al. 2014 Porter et al. 2013
Pleomorphic	 Pleolipoviruses	<i>Haloarcula</i> , <i>Halorubrum</i> , and <i>Halogeometricum</i>	Pietila et al. 2012
Head and Tail	 Myoviridae	<i>Halorubrum</i> , <i>Natrialba</i> , <i>Halobacterium</i> , <i>Haloarcula</i> , and <i>Methanobacterium</i>	Pietila et al. 2012 Ackerman et al. 2012
	 Podoviridae	<i>Haloarcula</i>	Pietila et al. 2012 Ackerman et al. 2012
	 Siphoviridae	<i>Haloarcula</i>	Pietila et al. 2012 Ackerman et al. 2012
Bottle	 Ampullaviridae	<i>Acidianus</i>	Haring et al. 2005a
Bacilliform	 Clavaviridae	<i>Aeropyrum</i>	Mochizuki et al. 2010
Droplet	 Guttaviridae	<i>Sulfolobus</i> and <i>Aeropyrum</i>	Arnold et al. 2000a Mochizuki et al. 2011
Linear	 Lipothrixviridae	<i>Acidianus</i> and <i>Sulfolobus</i>	Arnold et al. 2000b
	 Rudiviridae	<i>Sulfolobus</i> , <i>Stygiolobus</i> , and <i>Acidianus</i>	Prangishvili et al. 1999 Vestergaard et al. 2005
Spherical	 Globulaviridae	<i>Pyrobaculum</i> and <i>Thermoproteus</i>	Ahn et al. 2006 Haring et al. 2004
Icosahedral	 "Turriviridae"	<i>Sulfolobus</i>	Rice et al. 2004 Happonen et al. 2010

**Figure 1.** *Capsid morphotypes of archaeal viruses and associated host species (Snyder et al., 2015)*

“Viruses of halophilic archaea” below].

Sometimes, a virus can have a lipid covering, in which case it is then called an enveloped virus. In the absence of the lipid covering, the virus is called a non-enveloped or naked virus. In both of these cases, the entire virus particle, while being infectious and outside the host cell, is termed as the “virion.” Further, only the capsid and the genetic material together are known as the nucleocapsid (Norrby, 1983). Although there is scope for infinite variety of

virion structure, we see that their capsid morphology is highly conserved on Earth. Even the giant viruses with large genomes display the common icosahedral morphotype (Aherfi et al., 2016). Hence, study of the morphotypes in correlation with origin and environmental factors can explain the potential use of capsid morphology as a virus biosignature in extraterrestrial environments.

## 2. Predominant Morphotypes:

### *2.1 Viruses of Halophilic Archaea*

Halophilic archaea, also known as haloarchaea, thrive in hypersaline environments and only develop in saturation conditions greater than 10 percent salt, and are associated with abundant viruses living in the same environment (Oren, 2014). The haloarchaeal viruses can be classified into six different families but show only four different morphotypes: spindle-shaped, pleomorphic, head-tailed, and spherical. This section will review these four morphotypes and their significance from the perspective of virus evolution or interaction of the virion with environmental factors.

Spindle-shaped/lemon-shaped haloarchaeal viruses have capsids that are wide at the center with tapering ends. Analyses of multiple hypersaline environments have indicated that this is the most frequently observed morphotype in haloarchaeal viruses (Oren et al., 1997; Sime-Ngando et al., 2011). Out of all the observed spindle-shaped viruses, His1 is the only virus that has been isolated and studied. His1 possesses a tail-like structure that allows the virion to anchor onto and inject its genome into the host cell. Further, its non-enveloped capsid displays flexibility as the capsomeres are able to switch conformations in response to changes in the environmental conditions. This capsid morphotype flexibility could be a contributing factor for the resistance of the virus toward extreme environmental conditions (Hong et al., 2015). Consequently, this type of virus hints toward the dependency of the capsid morphology on the environment as opposed to the interaction between the genome and the capsomeres.

Pleomorphic haloarchaeal viruses have been proposed to be grouped into the *Pleolipoviridae* family. Seven of these viruses studied by Pietilä et al. (2012) had the same capsid structure made of lipid membrane and associated membrane and spike proteins, but none of the viruses have more than two or three major structural proteins. This implies that

pleomorphic haloarchaeal virions do not have nucleocapsids and instead rely on the lipids derived unselectively from the host for enveloping their genome. As a result, they are extremely host specific and do not cause host cell lysis, since they are released from the host cell by vesicle formation, inhibiting the growth of the host cell. The genome structures of these viruses vary between linear or circular and ssDNA or dsDNA. However, all of them show similarity in gene organization as well as amino acid sequences as seen in His2, which infects the same host as spindle-shaped His1 but shares amino acid sequences with pleomorphic HRPV-1 and HHPV-1. There is a great variation in the virion size, with HRPV-1 being the smallest with a 40 nm diameter and His2 being the largest with 70 nm diameter (Pietilä et al., 2012). Overall, pleomorphic haloarchaeal viruses display a unique yet common capsid morphology and rely heavily on the interaction between the virus and the host cell for replication as well as formation, and so this morphotype does not seem probable to exist without the presence of a cellular host in the same environment.

Viruses with head-tailed morphotype are alternatively known as *Caudovirales* and comprise an icosahedral head connected to a flexible tail. Approximately 96 percent of the known prokaryotic viruses are head-tailed, but analyses of haloarchaeal viruses from some hypersaline environments show that only 1 percent of them have this morphotype (Oren et al., 1997; Sime-Ngando et al., 2011; Ackermann & Prangishvili, 2012). The icosahedral head diameter typically ranges from 47–108 nm. All of the known head-tail haloarchaeal viruses fall into the three groups of bacteriophages that possess this morphotype: myovirus (long, contractile tail), siphovirus (long, non-contractile tail) and podovirus (short, non-contractile tail) (Atanasova et al., 2012). In addition to the morphological similarities, these viruses also share genetic similarity to the head-tail bacteriophages, and it has been proposed that head-tailed haloarchaeal viruses either were acquired from ancient halophilic bacterial hosts or existed prior to the evolution of the three domains (Krupovic et al., 2011; Prangishvili et al., 2006; Prangishvili, 2013). In either case, it is unlikely that this morphotype evolved independently in haloarchaea and in bacteria, since there is evidence of genetic elements that are conserved through vertical descent as well as genetic similarities due to horizontal gene exchange (Krupovic et al., 2011). The existence of these homologous genetic sequences spanning different domains suggests that viruses could have predated the last universal common ancestor

(Prangishvili et al, 2006; Prangishvili, 2013), so emergence of this kind of virions without a cellular host is probable.

Spherical haloarchaeal viruses have a lipid membrane inside the tailless icosahedral head, whose diameter can range from 50–80 nm. Analyses of some hypersaline environments revealed that this morphotype was most commonly found along with spindle-shaped morphotype (Oren et al., 1997; Sime-Ngando et al., 2011). However, only five species of haloarchaeal viruses with this morphotype have been discovered: SH1, PH1, HHIV-2, SNJ1 and HCIV-1. All of these belong to the same family: *Sphaerolipoviridae*. SH1, PH1 and HHIV-2 are closely related, share the same host, and have a linear dsDNA, whereas SNJ1 has a circular dsDNA (Atanasova et al., 2015; Porter et al., 2013]. A bacteriophage infecting *T. thermophilus* was discovered to have the same unusual capsid arrangement as these viruses and shared core genes and is proposed to be a part of the *Sphaerolipoviridae* family (Pawlowski et al., 2014). Discovery and description of more spherical haloarchaeal viruses is required to provide more information on the origin and interaction with environmental factors of viruses with this morphotype.

## *2.2 Viruses of Thermophilic Archaea*

Multiple genera of archaea comprise thermophiles that thrive and grow in extremely hot and sometimes also acidic environments. However, the most frequently isolated archaea are from the genus *Sulfolobus*, and consequently, viruses that infect these hosts are the most studied (Rice et al., 2001; *Thermophilic Archaea*, 2020). For this reason, this section will emphasize on the morphologies of viruses that infect members of *Sulfolobus*. The three major families of these viruses where all members of the family have the same morphology are *Rudiviridae*, *Lipothrixviridae*, and *Fuselloviridae* (Rice et al., 2001; Rice et al., 2001). It should be noted that viruses of thermophilic archaea show a large variety of capsid morphologies and do not always have a *Sulfolobus* host or resemble the viruses belonging to these four families. Hence, this section will also briefly present newly discovered and unique morphologies and aim to articulate on the influence of genetic relationships, hosts, and/or environmental conditions on the viruses of thermophilic archaea.

SIRV1 and SIRV2 are the two rudiviruses that specifically infect *Sulfolobus* archaea. They possess a rod-shaped capsid that resembles the filamentous lipothrixviruses, but they have been categorized into a new

family since they lack the lipid envelope (Prangishvili et al., 1999). Further, the 25 nm by 900 nm rod capsids are rigid and have a helical arrangement of capsomeres (Rice et al., 2001). On the other hand, SIFV is the only lipothrixvirus that has a *Sulfolobus* host, since other lipothrixviruses—such as AFV1, AFV2, AFV3, and others—have *Acidianus* hosts, which are also hyperthermophilic archaea (Prangishvili, 2013). These virions have long and flexible 50 nm by 900–1500 nm rod-shaped capsids that are enveloped by lipids derived from the hosts (Rice et al., 2001; Arnold et al., 2000). Hence, just like the pleomorphic haloarchaeal viruses [see “Viruses of halophilic archaea” above], lipothrixviruses show dependency on a cellular host for structural components, and so if these viruses are found, it is likely that cellular life forms also exist in the same environment. *Rudiviridae* and *Lipothrixviridae* have significant structural and genetic similarity and are usually referred as filamentous viruses (Prangishvili et al., 2017). Some studies show that these are the most commonly found morphotypes in hot-spring environments (Liu et al., 2019). It is possible that this is either a result of host availability in these environments or that the helical and filamentous capsid structure provides additional resistance to hot and acidic environments.

Some studies present that tailed spindle-shaped morphotype of viruses belonging to *Fuselloviridae* is the most common in hot and acidic environments (Rice et al., 2001). These viruses typically form structures called ‘rosettes’ outside the host cell by sticking to other virions at one end, and hence this is a distinguishing feature of fuselloviruses. Interestingly, there are many fuselloviruses that infect *Sulfolobus* archaea, but only ASV1 infects *Acidianus* archaea. This indicates that viruses with this morphotype have a strong host specificity and are unlikely to be found without the host. However, more research is needed to infer whether fusellovirus mutants could be resistant to host switching. Further, it should be noted that while SSV6 and ASV1 are genetically related to the other fuselloviruses, they are more pleomorphic than the others and can have multiple capsid shapes. These two also never form the characteristic ‘rosettes,’ perhaps owing to the difference in their tail fibers (Redder et al., 2009). This is particularly interesting because even though they have genetic similarities with other fuselloviruses, their capsid morphology is different, which means that host-virus interaction and environmental factors could be significantly influential in determining capsid morphology. Additional research on these two viruses that compare change in environment to

change in the morphology could address whether researchers can predict virus morphologies based on geological information.

Apart from the three families of most common *Sulfolobus* archaeal viruses, additional research of hyperthermophilic viruses having unique capsid morphologies has led to the proposal of new families like *Turriviridae* and *Guttaviridae* with *Sulfolobus* archaea host, as well as *Ampullaviridae* and *Bicaudaviridae* with *Acidianus* archaea host (Redder et al., 2009). Guttaviruses are droplet-shaped, ampullaviruses are bottle-shaped, bicaudaviruses are two-tailed spindle-shaped, whereas turriviruses are icosahedral. The turrivirus STIV is of the most interest to researchers currently due to its striking similarity to the proteins, lipids, and carbohydrates of some eukaryotic and bacterial viruses. Conservation of such structural components across domains despite genetic differences is promising because it fortifies the idea that virus capsids are restricted to a few morphotypes on Earth. STIV, just like haloarchaeal *Caudovirales* [see “Viruses of halophilic archaea” above], hints toward the existence of viruses before the divergence of the three domains of life and perhaps even the last universal common ancestor (Maaty et al., 2020). Therefore, discovery and description of such extremophile viruses with unique morphologies is vital for acquiring a deeper understanding of the origin of viruses on Earth and how the different capsid morphologies are affected by the interplay of genetic and environmental factors.

## **Conclusion**

Certain archaeal virus morphotypes are more common in specific environments. In hypersaline environments, we most frequently observe spindle-shaped, pleomorphic, head-tailed, and spherical morphotypes. Whereas in regions with high temperature and acidity, we find filamentous and spindle-shaped morphotypes, along with a large variety of other unique morphotypes. While study of the pleomorphic haloarchaeal viruses and lipothrixviruses emphasizes the dependency of viruses on hosts to exist, study of head-tail viruses and the turrivirus STIV indicates that originally viruses could have evolved before or concurrently with cellular life forms. The conservation of morphotypes in specific extreme environments and these derived implications about the origin of viruses on Earth can prove to be extremely insightful from the perspective of astrobiology, since it provides a better sense about the origin of life on Earth. Additional research on how environmental factors, hosts, and viral

genetics interplay to determine virus morphology and development in better imaging technology that can be used in space will allow future researchers to use morphology as a virus biosignature and expand the potential of search for life in space.

## References

- Ackermann, W-H., & Prangishvili, D. (2012). Prokaryote Viruses Studied by Electron Microscopy. *Archives of Virology*, 157(10), 1843–1849. doi.org/10.1007/s00705-012-1383-y
- Aherfi, S., Colson, P., La Scola, B., & Raoult, D. (2016). Giant Viruses of Amoebas: An Update. *Frontiers in microbiology*, 7, 349. doi.org/10.3389/fmicb.2016.00349
- Arnold, H. P., Zillig, W., Ziese, U., Holz, I., Crosby, M., Utterback, T., Weidmann, J., Kristjanson, J. K., Klenk, H. P., Nelson, K. E., Frazer, C. M. (2000). A Novel Lipothrixvirus, SIFV, of the Extremely Thermophilic Crenarchaeon *Sulfolobus*. *Virology*, 267(2), 252–266. doi.org/10.1006/viro.1999.0105
- Atanasova, N. S., Bamford, D. H., & Oksanen, H. M. (2015). Haloarchaeal virus morphotypes. *Biochimie*, 118, 333-343. doi.org/10.1016/j.biochi.2015.07.002
- Atanasova, N. S., Roine, E., Oren, A., Bamford, D. H., & Oksanen, H. M. (2012). Global network of specific virus-host interactions in hypersaline environments. *Environmental Microbiology*, 14(2), 426–440. doi.org/10.1111/j.1462-2920.2011.02603.x

- Berliner, A. J., Mochizuki, T., & Stedman, K. M. (2018). Astrovirology: Viruses at Large in the Universe. *Astrobiology*, 18(2), 207–22. doi.org/10.1089/ast.2017.1649
- Breitbart, M., & Rohwer, F. (2005). Here a Virus, There a Virus, Everywhere the Same Virus? *Trends in Microbiology*, 13(6), 278–284. doi.org/10.1016/j.tim.2005.04.003
- Hong, C., Pietilä, M. K., Fu, C. J., Schmid, M. F., Bamford, D. H., & Chiu, W. (2015). Lemon-shaped halo archaeal virus His1 with uniform tail but variable capsid structure. *Proceedings of the National Academy of Sciences of the United States of America*, 112(8), 2449–2454. doi.org/10.1073/pnas.1425008112
- Koonin, E. V., Senkevich, T. G. & Dolja, V. V. (2006). The ancient Virus World and evolution of cells. *Biology Direct*, 1(1), 29. doi.org/10.1186/1745-6150-1-29
- Krupovic, M., Spang, A., Gribaldo, S., Forterre, P., & Schleper, C. (2011). A thaumarcahal provirus testifies for an ancient association of tailed viruses with archaea. *Biochemical Society Transactions*, 39(1), 82–88. doi.org/10.1042/bst0390082
- Liu, Y., Brandt, D., Ishino, S., Ishino, Y., Koonin, E. V., Kalinowski, J., Krupovic, M., & Prangishvili, D. (2019). New archaeal viruses discovered by metagenomic analysis of viral communities in enrichment cultures. *Environmental Microbiology*, 21(6), 2000–2014. doi.org/10.1111/1462-2920.14479
- Maaty, W. S. A., Ortmann, A. C., Dlakić, M., Schulstad, K., Hilmer, J. K., Liepold, L., Weidenheft, B., Khayat, R., Douglas, T., Young, M. J., & Bothner, B. (2020). Characterization of the Archaeal Thermophile *Sulfolobus* Turreted Icosahedral Virus Validates an Evolutionary Link among Double-Stranded DNA Viruses from All Domains of Life. *Journal of Virology*, 80(15). doi.org/10.1128/JVI.00522-06
- Norrby E. (1983). The morphology of virus particles. Classification of viruses. *Textbook of Medical Virology*, 4–16. doi.org/10.1016/B978-0-407-00253-1.50007-4
- Oren, A. (2014). Taxonomy of halophilic Archaea: current status and future challenges. *Extremophiles*, 18(5), 825–834. doi.org/10.1007/s00792-014-0654-9

- Oren, A., Bratbak, G., & Haldal, M. (1997). Occurrence of Virus-like Particles in the Dead Sea. *Extremophiles*, 1(3), 143–149. doi.org/10.1007/s007920050027
- Pawłowski, A., Rissanen, R., Bamford, J. K. H., Krupovic, M., & Jalasvuori, M. (2014). *Gammasphaerolipovirus*, a newly proposed bacteriophage genus, unifies viruses of halophilic archaea and thermophilic bacteria within the novel family *Sphaerolipoviridae*. *Virology Division News*, 159(6), 1541–1554. doi.org/10.1007/s00705-013-1970-6
- Pietilä, M. K., Atanasova, N. S., Manole, V., Liljeroos, L., Butcher, S. J., Oksanen, H. M., & Bamford, D. H. (2012). Virion Architecture Unifies Globally Distributed Pleolipoviruses Infecting Halophilic Archaea. *Journal of Virology*, 86(11), Article 6384. doi.org/10.1128/JVI.00861-12
- Porter, K., Tang, S. L., Chen, C. P., Chiang, P. W., Hong, M. J., & Dyall-Smith, M. (2013). PH1: An archaeovirus of *Haloarcula hispanica* related to SH1 and HHIV-2. *Archaea*, 2013, Article 456318. doi.org/10.1155/2013/456318
- Prangishvili, D. (2013). The Wonderful World of Archaeal Viruses. *Annual Review of Microbiology*, 67, 565–585. doi.org/10.1146/annurev-micro-092412-155633
- Prangishvili, D., Arnold, H. P., Götz, D., Ziese, U., Holz, I., Kristjansson, J. K., & Zillig, W. (1999). A novel virus family, the Rudiviridae: Structure, virus-host interactions and genome variability of the sulfolobus viruses SIRV1 and SIRV2. *Genetics*, 152(4), 1387–1396. doi.org/10.1093/genetics/152.4.1387
- Prangishvili, D., Bamford, D. H., Forterre, P., Iranzo, J., Koonin, E. V., & Krupovic, M. (2017). The enigmatic archaeal virosphere. *Nature Reviews Microbiology*, 15(12), 724–739. doi.org/10.1038/nrmicro.2017.125
- Prangishvili, D., Forterre, P., & Garrett, R. A. (2006). Viruses of the Archaea: A unifying view. *Nature Reviews Microbiology*, 4(11), 837–848. doi.org/10.1038/nrmicro1527
- Rampelotto P. H. (2013). Extremophiles and extreme environments. *Life (Basel, Switzerland)*, 3(3), 482–485. doi.org/10.3390/life3030482

- Redder, P., Peng, X., Brügger, K., Shah, S. A., Roesch, F., Greve, B., She, Q., Schleper, C., Forterre, P., Garrett, R. A., & Prangishvili, D. (2009). Four newly isolated fuselloviruses from extreme geothermal environments reveal unusual morphologies and a possible interviral recombination mechanism. *Environmental Microbiology*, *11*(11), 2849–2862. doi.org/10.1111/j.1462-2920.2009.02009.x
- Rice, G., Stedman, K., Snyder, J., Wiedenheft, B., Willits, D., Brumfield, S., McDermott, T., & Young, M. J. (2001). Viruses from extreme thermal environments. *Proceedings of the National Academy of Sciences of the United States of America*, *98*(23), 13341–13345. doi.org/10.1073/pnas.231170198
- Sime-Ngando, T., Lucas, S., Robin, A., Tucker, K. P., Colombet, J., Bettarel, Y., Desmond, E., Gribaldo, S., Forterre, P., Breitbart, M., & Prangishvili, D. (2011). Diversity of virus-host systems in hypersaline Lake Retba, Senegal. *Environmental Microbiology*, *13*(8), 1956–1972. doi.org/10.1111/j.1462-2920.2010.02323.x
- Snyder, J. C., Bolduc, B., & Young, M. J. (2015). 40 Years of archaeal virology: Expanding viral diversity. *Virology*, *479–480*, 369–378. doi.org/10.1016/j.virol.2015.03.031
- Thermophilic Archaea*. (2020). National Parks Service, U.S. Department of the Interior, Retrieved 2021 from [www.nps.gov/yell/learn/nature/thermophilic-archaea.htm](http://www.nps.gov/yell/learn/nature/thermophilic-archaea.htm)

# A Review of *Staphylococcus aureus* Antibiotic Resistance: Geographical, Molecular, and Evolutionary Patterns in Recent Years



**ROGER CHRISTOPHER HSEIH**

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*WRITER'S COMMENT: Prior to taking UWP 102B, I had worked as a research assistant for UC Davis Medical Center's Infectious Diseases Division. The patients we saw often faced extended stays and were debilitated from sepsis due to strains like Staphylococcus aureus. Combination antibiotic therapy was frequently prescribed to those who were initially hospitalized for unrelated reasons, indicating the prevalence of antibiotic resistance. This was frustrating to witness. Surprisingly enough, I had recently accepted a postgraduate position to understand immune interactions with this microbe's evasion mechanisms. So, when Dr. Brenda Rinard encouraged us to write reviews on a biological topic that we wanted to master and were intrigued by, I knew exactly what to do. Creating my review not only provided a foundational understanding of the work I would be involved with, but it also enhanced my appreciation for the breadth of medical research on systemic issues in healthcare delivery. With hospitalization rates as high as they've ever been, I hoped to emphasize this issue's importance so that future generations will not lack necessary treatments we somewhat take for granted.*

*INSTRUCTOR'S COMMENT: Roger wrote this review article in my UWP 102B: Writing in the Biological Sciences course. I encouraged the students to research a topic they were curious about, or one that would help them understand the work that was being done on campus. They first found peer-reviewed sources, wrote an annotated bibliography, and then organized the sources in the review article with a focus on synthesis*

*and theme. Roger's article, "A Review of Staphylococcus Aureus Antibiotic Resistance: Geographical, Molecular, and Evolutionary Patterns in Recent Years," illustrates the best of this genre. His sources, taken from a variety of credible journals, show that even a niche topic in the biological sciences can be approached from a multidisciplinary perspective.*

—Brenda Rinard, University Writing Program

## **Abstract**

*Staphylococcus aureus* presents a large problem for present-day scientists, clinicians, and epidemiologists due to its quick adaptations to pharmacological development, increasing virulence, and rapid spread across the globe. The geographical effects of *S. aureus* are notable both within the hospital environment and the community. Thus, there is a dilemma of preventing this intertwining genetic transfer of strains carried out by workers who inhabit both settings. This dynamic presents a challenge, as the majority of procedures are largely associated with postoperative *S. aureus* infection complications, which can lead to death in those with many comorbidities or weakened immune systems. HA (hospital-associated) and CA-MRSA (community associated, methicillin-resistant *Staphylococcus aureus*) must be typed and tracked closely to both derive treatments and also prevent the future production of new superbugs. In addition to geographical patterns, molecular mechanisms must be well understood to produce new antibiotics. Resistance to penicillin in the mid-1940s has resulted in new indirect methods of attacking gram-positive *S. aureus* primarily through inhibitory mechanisms, but they are slowly becoming obsolete due to the elusive mechanisms of *S. aureus*. As a result, tracking *S. aureus* lines, comparing their relative genomes, and tracing their evolutionary patterns are essential to deriving new antimicrobial strategies. Relevant progress to combat this issue includes focusing on universal bacterial mechanisms such as quorum sensing or shared genetic characteristics, as well as recognizing the importance of utilizing the most conservative antibiotic treatment plans for patients.

## **Introduction**

*Staphylococcus aureus* is a gram-positive bacterial strain commonly found in human microbiota with a commensal relationship for human

metabolic function, but it also often acts as a potent opportunistic pathogen that is the leading cause of hospital-acquired infections (Klein et al., 2007). This microbe presents a global problem due to the additional expenditure required for treatment of hospitalized patients, increased mortality and complication rates, and also allocation of needed medical resources for longer stays (Zhen et al., 2020). A surge of antibiotic resistance by *Staphylococcus aureus* since the mid-1940s has caused much concern both within the scientific and clinical communities, prompting researchers to not only understand the source and carriers of new pathogenic strains but also the molecular mechanisms that are driving the continuation of these small epidemics (Demerec, 1945).

Despite many publicized therapeutic discoveries and antimicrobials such as penicillin and vancomycin on the market today, the elusiveness of *S. aureus* has outpaced pharmaceutical progress. As a result, it has forced scientists to establish a better understanding of its unique ability to acquire virulence factors that are far more potent than those of other strains (Spellberg et al., 2004). Its speed in changing has been attributed to horizontal gene transfer, antibiotic selection, and chromosomal mutations in important genes, which occur in select strains at a far more rapid pace than others. Resistance has also recently been attributed to normal bacterial survival mechanisms such as cell synthesis, quorum sensing, and new protein functions (Hanaki et al. 1998; Rudkin, 2012; Ubukata et al., 1989). Some are more prevalent in hospital infections than community spread infections due to overuse of common antibiotics. However, the unique method by which *S. aureus* excels at these common bacterial processes is yet to be determined, and has not been fully elucidated in recent research. There is also a lack of understanding as to how certain bacterial resistance mechanisms can be adapted to multiple types of antibiotics.

This review will outline the epidemiological variation in *S. aureus* and transmission patterns of both hospital-associated and community associated strains. Understanding the specific demographic of *S. aureus* carrier patients helps identify the origins of these infections and allow scientists to implement a “search and destroy” initiative to reduce epidemic occurrences (Chatterjee & Otto, 2013). In addition, this paper also examines the evolutionary patterns and traits specific to methicillin-resistant *S. aureus* strains in more recent years. These include methicillin, vancomycin, and rifampicin resistance that accounts for research

developments being made and their effectiveness in mitigating the burden of disease. *S. aureus*' constantly changing abilities requires a timely and concerted multidisciplinary effort to continue antibiotic development, identify factors that contribute to resistance, and understand the patterns of strain transmission.

## **Epidemiology of *S. aureus* Infection Types**

*S. aureus* has long been recognized as the major cause of skin and soft tissue infections but is also a large contributor to systemic infections. Due to its clinical significance and invasion in pathology involving lung infections and sepsis, *S. aureus* was originally thought to be solely a burden in the clinical setting. The rise of MRSA had been previously established as a result of improper dosing regimen due to weakened immune systems and other chronic disorders. Hospital-associated (HA) infections were much more apparent and a result of direct patient contact, open wounds, procedures, and airborne transmission due to the presence of nosocomial infections (Solberg, 2000). However, sampling within the past few decades has proven the large presence of community associated (CA) infections. In addition, these infections were observed in seemingly healthy and nonsusceptible patients who had no clinical exposure, emphasizing the pathogenicity of these strains. Approximately 65 percent of MRSA epidemic infections sampled from three different locations were revealed to be CA infections (Dukic et al., 2013). This drastic shift in dominant MRSA strains from HA to CA suggests a difference in virulence factors and fitness properties that had not been previously observed in the already potent methicillin resistant microbes. Toxins exclusive to CA strains, such as particular SCC*mec* elements like type IV, are a source of difference from the original HA type I-III toxins and indicate a target for future therapeutics. In addition, the higher level of expression of Panton-Valentine leukocidin (PVL) toxins in CA-MRSA allows evasion from neutrophil immune response (Otto, 2013). Based on this molecular typing, CA-MRSA can thus be inferred to be much more pathogenic than HA-MRSA. While none of the features are exclusive to its origin of discovery, it is important to continue whole-exome sequencing of these different strains to establish new virulence factors in strains from different locations. These efforts are essential to creating new broad-spectrum antibiotics that could be potentially effective against MRSA and other similar up-and-coming microbes.

The prominence and increased pathogenicity of these strains raises the question of transmission methods within the community. Direct skin-to-skin contact and hygiene in specific settings such as gyms, daycare facilities, and prisons and among specific demographics such as cultural minorities have been established as the most common forms of spread outside of the clinical setting (Dukic et al., 2013). Targeting these strains and treating infected patients before requiring acute medical attention is a priority. These measures are intended to prevent pathogen dominance in the clinical setting due to their increased virulence and spread to other patients who may be more susceptible to worse clinical outcomes. As a result, identification of strain origins has been conducted in those who may be present in both the community and healthcare settings to elucidate whether those entering the workforce may acquire HA-MRSA and spread it into the community, or possess CA-MRSA and spread it into the clinic. Of the medical students at Galilee of Bar-Ilan University in Safed, Israel, 12 percent were revealed to have CA-MRSA with characteristic SCC $mec$  type IV elements prior to even entering clinical education (Orlin et al., 2017). Students also acquired MRSA after exposure to the clinical setting going from 33 percent carriers to 41 percent, but acquisition of any new strain presents the unique problem of genetic transfer between strains of both settings.

Due to the interaction between CA-MRSA and HA-MRSA, risk factors for infection and morbidity must be delineated for effective treatment. Prevention of HA-MRSA is essential to avoid worsening outcomes due to the threat of community infection encroachment. Within the hospital setting locally in Wales, risk factors for invasive MRSA infection are greatest for urinary catheterization, central lines, and surgical procedures, with 51 percent, 39 percent, and 16 percent association, respectively (Carnicer-Pont et al., 2016). These are necessary focal points prior to medical intervention in order to reduce the economic burden and mortality rates of patients. Data from Novant in the southeastern United States has shown that hand hygiene may be associated with all these procedures and can drastically reduce HA-MRSA infections by half over the span of three years, from 2005 to 2008 (Lederer et al., 2009). The prevention and isolation of MRSA strain geographical overlap is essential not only for treatment but potential future eradication of other antibiotic-resistant strains.

## Molecular mechanisms of antibiotic resistance in *S. aureus*

Decoding the molecular mechanisms behind *S. aureus* resistance is essential not only to understanding potential therapeutic candidates, but also for identifying unique behavioral patterns within the species. Resistance in common bacterial strains has been established as a result of incomplete therapy, but a large portion of *S. aureus*'s effects have been attributed to its unique evasion molecules encoded by its genome (Chatterjee & Otto, 2013). Resistance of *S. aureus* has been noted since the inception of penicillin production, but primarily due to SCC*mec* elements. These mobile genetic elements may be transferred from strain to strain and encode for penicillin binding proteins (PBPs). Since penicillin binds to the peptidoglycan layer of most gram-positive bacteria and disrupts cell wall synthesis, particular *mec* genes have been sought to understand its evasion of common antibiotics. PBPs were shown to be produced at high amounts by *mecA*, which could be potentially induced into non-resistant strains. This process required recombinant plasmid vectors, transformed *mecA* cassettes, and a variable amount of penicillin-derived antibiotics containing B-lactam. Destruction of penicillin by exogenous penicillinase and increased antibiotic resistance with a MIC (minimum inhibitory concentration) was found to be four times as high as the baseline as well (Ubukata, 1989). This further proved that penicillinase may be a translational product that could assist MRSA in its PBP efficacy. These statistically significant results point to horizontal or lateral resistance as a large source of resistance in various cell lines both *in vitro* and in clinical subjects. The ease by which *S. aureus* obtains these resistance factors is alarming, as it indicates the abundance and combination of *mec* elements can produce strains that may be even more difficult than current MRSA strains to treat. *mecA*'s prevalence worldwide is a prime example of this universal resistance that occurs rapidly regardless of geographical location (Hiramatsu et. al, 2002).

The ubiquity of MRSA resistance is likely due to its primal status in resistance development relative to other bacterial strains, but evasion is not solely isolated to methicillin-derived products. Development of newer MRSA-susceptible antibiotics, including vancomycin, have been required to combat widespread bacterial resistance. These therapeutics have also resulted in newer strains of vancomycin-resistant *S. aureus* (VRSA) as a result of agricultural antibiotic usage (Bager et al. 1997). The mechanisms of vancomycin resistance have been evaluated in MRSA

strains, particularly with relation to cell-wall synthesis. While penicillin serves to destroy gram-positive bacteria through direct interaction with cellular components, newer antibiotics serve as inhibitory factors. Vancomycin had been previously shown to interfere with hydrogen bonds with N-acetylglucosamine in the cell wall, preventing further cross-linkage of more glucose polymers (Chatrchai, 1984). Certain *S. aureus* strains, such as Mu3 and Mu50, were used in vancomycin treatment studies to identify N-acetylglucosamine synthesis and incorporation. As the Mu50 strains had inherently larger cell walls, it was established to have a statistically significant correlation to increased vancomycin resistance (Hanaki et al. 1998). This is opposed to Mu3, whose slower incorporation of cell-wall components and smaller cell walls have been shown to result in lower fitness. Due to the exogenous nature of most therapeutics, this mediation of antibiotic resistance through released toxins or altered membrane features is common. This suggests that continued incorporation of mobile genetic elements can adapt to different external environments and provide better survival despite antibiotics with different mechanisms of action.

## **Evolution of *S. aureus* resistance**

Evolution of resistance mechanisms is largely unknown in *S. aureus* due to the variability of toxins and virulence factors *S. aureus* is capable of producing. To attempt to understand this variability, genome sequencing for strains from different environments such as hospitals and community locations was conducted (Holden et al. 2004). These were compared to previously known MRSA strains to understand recurrent genetic elements, insertion sequences, protein-encoding sequences, and chromosomal genes. Through hospital-associated strains such as MRSA252 and community-associated strains like MSSA476, a set of criteria can be compared. Such criteria include mobile cassettes like *mecA* which are present in hospital-associated MRSA, but absent in community-associated methicillin-susceptible strains like MSSA476. MRSA strains like MRSA252 have more resistance determinants, virulent homologues, and encoding transposons, indicating that many hospital-associated strains are still more virulent. However, the similarities between MRSA252 and MSSA476 represent a case study in which their similarities suggest genetic relationship and familiar derivation from one to another (Holden et al. 2004). This data suggests that there is a high

but not statistically significant chance that many MRSA strains are born from MSSA strains through biofilm interaction and symbiosis between one another. Due to the variability within hospital environments, it is possible that there is an increased evolution of resistance in particular MRSA strains.

This interaction between strains and abundance of *S. aureus* in the clinic however, may lead to negative consequences for MRSA strains. The *agr* quorum sensing system, which is intended for MRSA to employ a virulent response, was observed to be inhibited by *mecA* mobile elements (Rudkin, 2012). This toxicity reduction is dose dependent, suggesting that the presence of more HA strains may reduce its virulence overall and cause self destruction despite resistance. This was noted with *in vitro* studies where rifampicin-resistant strains led to lower fitness when exposed to increasing rifampicin levels (Wang et al. 2019). However, despite a shorter lifespan, the same strains were still incredibly pathogenic at its initial MIC. Antibiotic resistance may come with a fitness cost to certain bacteria in the absence of antibiotic overuse, but the relative threshold can not be determined *in vitro* and will vary between patients due to prior exposure and different immune systems. *S. aureus* may capitalize, proliferating at this MIC threshold and triggering a storm of pathogen-specific toxins that could be resistant to a singular commercial antibiotic and immune responses. As a result, it is important for certain antibiotics such as rifampicin to not be used alone and recklessly, and it is essential to employ complex antibiotic regimens in certain patients. Due to the constant evolution of existing and new strains and our knowledge on its diverse mechanisms, it is important to maintain a wide arsenal of differing treatment plans when combatting *S. aureus*.

## Conclusion

Recent data suggests a significant relationship between *S. aureus* prevalence in geographical communities and the constant quest to develop more therapeutics for nonexistent resistant mechanisms. The elusive nature of certain strains requires sequencing, identification of genetic elements, and observation of molecular phenotypes. However, reduction of transmission highly depends on geographical origin and is essential to delay an imminent need for pharmacological breakthrough. Thus, HA and CA infections must be identified and epidemiologically traced. Discovery of particular strains has revealed newer antibiotic resistance

mechanisms that may now be more prevalent within communities, but these observations are definitely not an endpoint indication of mechanism prevalence. These strains have exhibited increased cell-wall synthesis mechanisms as well as SCC<sub>mec</sub> and *mecA* elements that specifically target current broad-spectrum antibiotics like methicillin and penicillin. These antibiotic resistance mechanisms have evolved rapidly in *S. aureus* through horizontal gene transfer and chromosomal mutations within biofilms over the past seventy-five years. However, some mutations may cause a decrease in fitness cost. Due to the rapidly changing schematic of *S. aureus* virulence factors and the rise of MRSA, much work and clinical studies should be conducted for more effective pharmaceutical solutions. Further studies on strain-specific characteristics are essential for treatment of patients, due to the highly variable combination of genetic elements, in order to reduce economic burden and mortality rates.

## References

- Bager F, Madsen M, Christensen J, Aarestrup FM. (1997). Avoparcin used as a growth promoter is associated with the occurrence of vancomycin-resistant *Enterococcus faecium* on Danish poultry and pig farms. *Preventive Veterinary Medicine*, 31(1–2), 95–112. doi.org/10.1016/S0167-5877(96)01119-1
- Carnicer-Pont, D., Bailey, K. A., Mason, B. W., Walker, A. M., Evans, M. R., & Salmon R. L. (2006). Risk factors for hospital-acquired methicillin-resistant *Staphylococcus aureus* bacteraemia: a case-control study. *Epidemiology & Infection*, 134(6), 1167–1173. doi.org/10.1017/S0950268806006327
- Chatrchai, W. (1984). Mode of action and *in-vitro* activity of vancomycin. *Journal of Antimicrobial Chemotherapy*, 14, 7–18. doi.org/10.1093/jac/14.suppl\_D.7
- Chatterjee, S. S., & Otto, M. (2013). Improved understanding of factors driving methicillin-resistant *Staphylococcus aureus* epidemic waves. *Clinical epidemiology*, 5, 205–217. doi.org/10.2147/CLEP.S37071

- Demerec, M. (1945). Production of Staphylococcus Strains Resistant to Various Concentrations of Penicillin. *Proceedings of the National Academy of Sciences of the United States of America*, 31(1), 16–24. doi.org/10.1073/pnas.31.1.16
- Dukic, V. M., Lauderdale, D. S., Wilder, J., Daum, R. S., & David, M. Z. (2013). Epidemics of community-associated methicillin-resistant Staphylococcus aureus in the United States: a meta-analysis. *PloS one*, 8(1), Article e52722. doi.org/10.1371/journal.pone.0052722
- Hanaki, H., Kuwahara-Arai, K., Boyle-Vavra, S., Daum, R. S., Labischinski, H., & Hiramatsu, K. (1998). Activated cell-wall synthesis is associated with vancomycin resistance in methicillin-resistant Staphylococcus aureus clinical strains Mu3 and Mu50. *Journal of Antimicrobial Chemotherapy*, 42(2), 199–209. doi.org/10.1093/jac/42.2.199
- Hiramatsu, K., Katayama, Y., Yuzawa, H., & Ito, T. (2002). Molecular genetics of methicillin-resistant *Staphylococcus aureus*. *International Journal of Medical Microbiology*, 292(2), 67–74. doi.org/10.1078/1438-4221-00192
- Holden, M. T., Feil, E. J., Lindsay, J. A., Peacock, S. J., Day, N. P., Enright, M. C., Foster, T. J., Moore, C. E., Hurst, L., Atkin, R., Barron, A., Bason, N., Bentley, S. D., Chillingworth, C., Chillingworth, T., Churcher, C., Clark, L., Corton, C., Cronin, A., Doggett, J., ... Parkhill, J. (2004). Complete genomes of two clinical Staphylococcus aureus strains: evidence for the rapid evolution of virulence and drug resistance. *Proceedings of the National Academy of Sciences of the United States of America*, 101(26), 9786–9791. doi.org/10.1073/pnas.0402521101
- Klein, E., Smith, D. L., Laxminarayan, R. (2007). Hospitalizations and Deaths Caused by Methicillin-Resistant *Staphylococcus aureus*, United States, 1999–2005. *Emerging Infectious Diseases*, 13(12), 1840–1846. doi.org/10.3201/eid1312.070629
- Lederer Jr., J. W., Best, D., & Hendrix, V. (2009). A Comprehensive Hand Hygiene Approach to Reducing MRSA Health Care–Associated Infections. *The Joint Commission Journal on Quality and Patient Safety*, 35(4), 180–185. doi.org/10.1016/S1553-7250(09)35024-2

*A Review of Staphylococcus aureus Antibiotic Resistance*

- Orlin, I., Rokney, A., Onn, A., Glikman, D., & Peretz, (2017). A. Hospital clones of methicillin-resistant *Staphylococcus aureus* are carried by medical students even before healthcare exposure. *Antimicrobial Resistance & Infection Control*, 6, Article 15. doi.org/10.1186/s13756-017-0175-2
- Otto, M. (2013). Community-associated MRSA: What makes them special? *International Journal of Medical Microbiology*, 303(6-7), 324–330. doi.org/10.1016/j.ijmm.2013.02.007
- Zhen, X., Lundborg, C. S., Zhang, M., Sun, X., Li, Y., Hu, X., Gu, S., Gu, Y., Wei, J., & Dong, H. (2020). Clinical and economic impact of methicillin-resistant *Staphylococcus aureus*: A multicentre study in China. *Scientific Reports*, 10, Article 3900. doi.org/10.1038/s41598-020-60825-6
- Rudkin, J. K., Edwards, A. M., Bowden, M. G., Brown, E. L., Pozzi, C., Waters, E. M., Chan, W. C., Williams, P., O’Gara, J. P., & Massey, R. C. (2012). Methicillin resistance reduces the virulence of healthcare-associated methicillin-resistant *Staphylococcus aureus* by interfering with the *agr* quorum sensing system. *The Journal of infectious diseases*, 205(5), 798–806. doi.org/10.1093/infdis/jir845
- Solberg, C. O. (2000). Spread of *Staphylococcus aureus* in Hospitals: Causes and Prevention, *Scandinavian Journal of Infectious Diseases*, 32(6), 587–595. doi.org/10.1080/003655400459478
- Spellberg, B., Powers, J. H., Brass, E. P., Miller, L. G., Edwards Jr., J. (2004). Trends in Antimicrobial Drug Development: Implications for the Future, *Clinical Infectious Diseases*, 38(9), 1279–1286. doi.org/10.1086/420937
- Ubukata, K., Nonoguchi, R., Matsushashi, M., & Konno, M. (1989). Expression and inducibility in *Staphylococcus aureus* of the *mecA* gene, which encodes a methicillin-resistant *S. aureus*-specific penicillin-binding protein. *Journal of Bacteriology*, 171(5), 2882–2285. doi.org/10.1128/jb.171.5.2882-2885.1989
- Wang, C., Fang, R., Zhou, B., Tian, X., Zhang, X., Zheng, X., Zhang, S., Dong, G., Cao, J., & Zhou, T. (2019). Evolution of resistance mechanisms and biological characteristics of rifampicin-resistant *Staphylococcus aureus* strains selected in vitro. *BMC Microbiology*, 19, Article 220. doi.org/10.1186/s12866-019-1573-9

# Low-Grade Appendiceal Mucinous Neoplasms Mimicking Ovarian Adnexal Masses: A Case Report



RAVINDER SINGH

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*WRITER'S COMMENT: I underwent appendix surgery as a child after one-year intake of medicines prescribed by multiple physicians, and all these medications were regarded as unnecessary at the time of diagnosis. I can still recall those hospital visits as a child in India, and during each visit, I heard new stories from the other patients complaining about their critical health conditions due to previous treatments following the wrong diagnosis. The observance of misdiagnosis in treatments shaped my goal of becoming a physician and a medical researcher. So, when Dr. Herring gave us this challenging assignment of writing a formal case report centric around the real person, I perceived it as an opportunity to present a report that might help in avoiding the misdiagnosis and started to look for someone who had a health problem prone to misdiagnosis. To my surprise, I found a lot of health problems that are prone to misdiagnosis, but I chose to write about my aunt, who suffered from rare misleading cancerous tumors originating from her appendix that were misdiagnosed preoperatively and only accurately diagnosed during her surgery. This writing assignment allowed me to delve deep and understand the correct diagnosis of her rare health problem through a collection of her records, her family's description of her real-life experience, and my research. I consider myself very fortunate to be able to present this case report that might help in making the correct diagnosis of these misleading mucinous neoplasms of appendiceal origin.*

*INSTRUCTOR'S COMMENT: In my Writing in the Professions: Health course, one assignment is a formal case report. The students find someone who is sick or hurt, and write a detailed account of the problem. The report must be thorough to the point that nothing important—or even anything unimportant—is left out. Further, the language must be ruthlessly technical. “The patient had things on his face, so he went to the doctor,” becomes, “A 36-year-old male presented with bilateral facial lesions, and when blood work revealed a CD4+ count of ~100, the PCP suspected Kaposi’s sarcoma.” Oh, and the report has to be written about a real person, known to the writer. Ravinder had his hands full just doing the basics, but he takes it a step further. He describes, step by step, a case in which the root of the problem is a disorder so rare that it requires a long and complex ordeal to get at that root. The result is a case report which is different in no really important way from the real thing, in a real medical journal—except that the author is not yet a physician.*

*—Scott Herring, University Writing Program*

## **Introduction**

Low-grade appendiceal mucinous neoplasms, also known as LAMN, are rare malignant tumors of appendiceal origin that often lead to pseudomyxoma peritonei following the rupture of the excessively occluded lumen of the appendix. The incidence of this malignancy is very rare, with only 2.8 cases per million persons as of 2011 (Shaib et al., 2017). These neoplasms are easily misdiagnosed due to their rare occurrence, thus causing a delay in treatment which sometimes leads to sepsis. Here, I report the case of a fifty-six-year-old female who suffered from pseudomyxoma peritonei caused by rare malignant tumors of appendiceal origin, which was accurately diagnosed only during surgery due to the misleading nature of these tumors.

## **Case Presentation**

A fifty-six-year-old postmenopausal female presented to the emergency department of the medical center with a four-month history of abdominal pain in the right lower quadrant and a recent pain occurrence in the hypogastric region. The patient, with chief complaints of recurrent

nausea, emesis, and abdominal distension, reported that she had observed progressive abdominal expansion from the last two years but had not experienced any chronic abdominal pain episodes or any gastrointestinal problems. Upon physical examination, the persistent abdominal pain at a steady level eight on the Wong-Baker pain scale was noted, along with tenderness in the right iliac fossa with a rebound tenderness extending to the pelvic region. The vital signs were normal with temperature 39°C, blood pressure 133/82 mm Hg, pulse rate 89/min, and respiratory rate 18/min. Upon admission, the abdominopelvic CT scan revealed peritoneal effusion along with massive ascites and a hard, lobulated pelvic cystic mass. The blood work revealed a mild leukocytosis with an increase in the percentage of segmented neutrophils. Suspecting the pelvic mass to be a malignant ovarian adnexal mass, the emergency physician referred her to a gynecologic oncologist.

The patient was transferred to the Department of Obstetrics and Gynecology on the same day. The gynecologic oncologist performed a pelvic examination, which revealed positive adnexal tenderness and negative cervical motion tenderness. The following day, a clinical examination including abdominopelvic sonography and trans-vaginal ultrasonography confirmed a multi-cystic mass of about 14 cm in diameter, filled with fluid, below the uterus in the right adnexa. The transvaginal ultrasonography also showed a complex unilateral cystic ovarian mass originating from the right ovary, suggestive of ovarian cancer. The patient denied experiencing any past reproductive issues. The blood tests showed CRP level elevated to 38.5 mg/dL and the expression levels tumor markers CEA, CA19-9 and CA125 elevated to 5 ng/ml, 52 U/ml, and 36 U/ml respectively. Magnetic resonance imaging showed a cystic mass of diameter 8.2 cm in contact with the right ovary and the uterus in the right iliac fossa extending to the hypogastric region. MRI also showed small tumorous implants causing lesions on the anterior peripheral surface of the liver and spleen, suggesting the dissemination of the mucin from the tumors in the abdominal cavity as a result of metastasis. The ascitic fluid cytology examination revealed the malignancy of mucinous cells. Based on the clinical presentation, the patient, diagnosed preoperatively with suspected pseudomyxoma peritonei induced by mucinous malignant ovarian tumors, was scheduled for the exploratory laparotomy.

On the third day after admission, the patient reported high abdominal distension; therefore, an interventional radiologist performed paracentesis and drained 300 mL of ascites mucinous fluid. Following

the procedure, the patient reported relief and remained stable for the remainder of the day. On the fourth day, the blood pressure of the patient suddenly dropped to 103/62 mm Hg with a respiratory rate of 14 bpm and her temperature rose to 38°C. An electrocardiogram showed atrial fibrillation with a rapid ventricular rate. Her blood results showed a raised CRP level to 52.5 mg/L. Based on the clinical examination, the patient was suspected to have intraperitoneal sepsis due to infected pseudomyxoma peritonei secondary to suspected malignant ovarian neoplasia. An emergency exploratory laparotomy was performed jointly by the oncologist and gynecologic oncologist, which revealed the ruptured appendiceal mucocele with omental caking, scalloping of some anterior surface of the liver, intraperitoneal metastasis to the ovary, and the invasive peritoneal mucinous implants. Thus, cytoreductive surgery along with appendectomy, right hemicolectomy, peritonectomy, unilateral oophorectomy, and omentectomy was performed. Another laparotomy was performed twenty-four hours later for peritoneal washout and further debulking of tumors. Following the second laparotomy, hyperthermic intraperitoneal chemotherapy, also known as HIPEC, with 40 mg of mitomycin-C at a target temperature of 42–43°C was performed for ninety minutes. The intra-abdominal infection was treated with intravenous ceftriaxone 1 g Q24H and cefepime 2 g IV Q8H extended infusion plus metronidazole 500 mg IV Q8H.

Swab tests of the fluid taken from the appendix showed moderately growing *Enterococcus faecalis*, *Bacteroides fragilis*. Histological examination demonstrated that the mass was a low-grade mucinous neoplasm of appendiceal origin associated with mucocele-like lining epithelium and acellular mucus. Pathology results revealed pT4b N0 M1a invasive mucinous of appendiceal origin with the invasion of the ovary and anterior surface of the liver. These findings showed the perforated low-grade appendiceal mucinous neoplasms as the leading cause of pseudomyxoma peritonei with the appendix as the primary site, and the coexisting mucinous ovarian tumors and peritoneal deposits represented metastasis from the appendiceal mucinous neoplasm. The patient was discharged after three weeks' surveillance with no imaging evidence of intra-abdominal infection or any malignant tumors with no further therapy. A six-month follow-up showed that the patient was asymptomatic with no pathological imaging findings of dissemination or any malignant mucinous neoplasms.

## **Discussion**

Appendiceal mucinous neoplasms are very rare and only constitute about 1 percent of cancer cases and 0.3 percent of appendectomy cases. Based on the earlier classifications, mucinous neoplasms pertaining to the appendix were considered benign, but based on the recent studies, these are considered malignant and are classified as low-grade tumors with acellular mucin in or beyond the appendiceal wall (Shaib et al., 2017). Certain studies report the predominance of these neoplasms in females with 4:1 (Papoutsis et al., 2011). The appendiceal mucinous tumors such as low-grade mucinous neoplasms can rupture easily and spread into the peritoneum in the gelatinous form, leading to pseudomyxoma peritonei. A pseudomyxoma peritonei is a clinical syndrome that occurs when the peritoneal cavity is filled with mucous beyond the right lower quadrant of the abdomen and the underlying cause of mucous could be ovarian cysts, appendiceal mucinous tumors, or any abdominal mucinous cyst (Ramaswamy, 2016). Since low-grade appendiceal mucinous neoplasms are very rare, pseudomyxoma peritonei due to this condition is an unusual occurrence in which several mucinous peritoneal and omental implants along with mucinous ascites occupy the abdominal cavity resulting in abdominal distension. As the mucinous tumor grows inside the appendix, it occludes the lumen of the appendix. Mucus accumulates within the appendix, perforates it, and seeds the peritoneum with the mucous secreting malignant cells which further produce ascites and tumor implants on other abdominal organs by proliferating. Sometimes in cases of delayed diagnosis, appendiceal perforation is accompanied by bacterial contamination of mucous, further leading to sepsis as presented in the patient (Huang et al, 2015).

The most effective treatment for the pseudomyxoma peritonei is the cytoreductive surgery involving peritonectomy and other surgical incision of invaded organs, followed by hyperthermic intraperitoneal chemotherapy with 40 mg of mitomycin-C at a target temperature of 42–43°C performed for ninety minutes. The timing of cytoreductive surgery usually is based on the peritoneal cancer index, which is determined by the lesion size score and the tumor size in a particular region of the abdomen. The surgeries are preoperatively planned based on the appendiceal tumor size, but in the patient presented in our case, the appendiceal tumor was not detected using radiographic imaging

techniques. Moreover, the peritoneal cancer index was immeasurable due to the adhesions and the unusual location of the tumor, which further contributed to the misdiagnosis of the tumor. If the appendiceal mucinous tumors are detected while they are confined within the lumen of the appendix before the perforation, an appendectomy, in conjunction with right hemicolectomy, eliminates the entire malignancy without the risk of lymphovascular invasion, and no additional therapy is necessary. Although the HIPEC in the patient was performed using mitomycin, other chemoperfusion regimens can be used for HIPEC, such as oxaliplatin, which is mostly used in Europe (Melnitchouk & Meyerhardt, 2020).

Once ruptured, appendiceal mucinous neoplasms often lead to various tumorous implants in the peritoneal cavity and sometimes result in a right adnexal mass with a primary appendiceal origin. So, a differential diagnosis should be made by the gynecologist, considering the possibility of mucinous neoplasms of appendiceal origin if a pelvic mass is found in close proximity to the right ovary (Ozdemir & Usubutun, 2016). Radiographic imaging techniques such as MRI do not show the calcification character present in the layered walls of the cystic mass, thus making it harder to classify the origin of mass preoperatively. The tumors in the peritoneal cavity are very hard to distinguish from right adnexal cysts, especially when the radiographic imaging does not present enough evidence of perforation or dilation of the appendix. Therefore, in order to avoid misdiagnosis, the gynecologic oncologist should consider the possibility of mucocele and the mucinous neoplasms associated with it in the patient, with an additional emphasis on women with unusual ultrasonographic findings in the right adnexal region. Moreover, the unilateral character of the right ovarian cyst should be considered while making the diagnosis, and a laparotomy should be considered to verify the diagnosis (Papoutsis et al., 2011). This case study is intended to make clinicians aware of the likeliness of mucinous neoplasms of appendiceal origin mimicking as an ovarian mucinous cyst in the hypogastric region, which can be often misdiagnosed, resulting in avoidable complications such as sepsis.

The patient passed away in an accident a year ago.

## References

- Huang, Y., Alzahrani, N. A., Liauw, W., Morris, D. L. (2015). Case of intraperitoneal sepsis secondary to rupture of the appendix on the background of pseudomyxoma peritonei. *Annals of Medicine & Surgery*, 4(1), 1–4. doi.org/10.1016/j.amsu.2014.07.006
- Melnitchouk, N, & Meyerhardt, J. A. (2020). Epithelial tumors of the appendix. D. M. F. Savarese & W. Chen (Eds.), *UpToDate*, Wolters Kluwer Health. www.uptodate.com/contents/epithelial-tumors-of-the-appendix
- Ozdemir, D. A., & Usubutun, A. (2016). PAX2, PAX8 and CDX2 Expression in Metastatic Mucinous, Primary Ovarian Mucinous and Seromucinous Tumors and Review of the Literature. *Pathology and Oncology Research*, 22, 593–599. doi.org/10.1007/s12253-016-0040-2
- Papoutsis, D., Protopappas, A., Belitsos, P., Sotiropoulou. M., Antonakou, A., Loutradis, D., & Antsaklis, A. (2011). Mucocele of the vermiform appendix misdiagnosed as an adnexal mass on transvaginal sonography. *Journal of Clinical Ultrasound*, 40(8), 522–525. doi.org/10.1002/jcu.20858
- Ramaswamy, V. (2016). Pathology of Mucinous Appendiceal Tumors and Pseudomyxoma Peritonei. *Indian Journal of Surgical Oncology*, 7(2), 258–267. doi.org/10.1007/s13193-016-0516-2
- Shaib, W. L., Assi, R., Shamseddine, A., Alese, O. B., Staley, C. III., Memis, B., Adsay, V., Bekaii-Saab, T., & El-Rayesa, B. F. (2017). *The Oncologist*, 22(9), 1107–1116. doi.org/10.1634/theoncologist.2017-0081

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