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From Colonial Agriculture to Community Resilience: A History of the United States Gulf Coast, 1718-2005

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From Colonial Agriculture to Community Resilience: A History of the United States Gulf Coast,

1718-2005

Senior Project Submitted to
The Division of Social Studies
of Bard College

by
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Acknowledgements

Monday, August 29, 2005 was a day I will never forget. It was my first day of second grade—or at least, the first day of second grade that I can remember. It was my first day of school in Mississippi. Both of my parents had been hired at the local university, and in July of 2005, we packed our bags and drove from our home in Newcastle, Maine to the college town of Oxford, Mississippi. On that Monday, I remember waiting on the curb for my dad to come pick me up. It was windy. I remember looking up to the sky and thinking I had never seen such a combination of blues and purples and greens. It hadn't started to rain, but a storm was certainly brewing. All I could think was how embarrassed I was to be the last kid being picked up that day—everyone else's parents had come through the pick-up line already, and I remember being beyond annoyed at my father. Not only was I the last kid, but I was the last *black* kid, and I remember feeling so out of place—normally black kids only took the bus. I was alone.

He finally picked me up, probably 20 minutes late. He was late because he heard that a tree had fallen through his new boss's home, and he had rushed across town to help them tarp the roof before the rain began. I'm sure he told me that there was a hurricane on its way, and I'm sure I had no idea what that really meant.

Despite my lack of realization at the time, this was a major turning point in my life. Not only did I deal with the subconscious understanding of racial stereotypes ("What if my teachers think my Dad isn't picking me up because I'm another neglected black child?), but this was the first time I had heard of a weather event wrecking a home.

A couple years later, at a family reunion in Donaldsonville, Louisiana, my Aunt and Grandmother took me to New Orleans to see the recovery process in action. It was deeply traumatizing to me—full neighborhoods destroyed, with houses ransacked and spray-painted to indicate rescues or the recovered dead. I remember having the realization that I could, too, have my house flooded, and have all of my personal belongings float into the street. My grandmother said something along the lines of, "Now this is why we pray to God. So that this never happens."

8-year-old me knew that I didn't believe in God, but I wondered if I should—would prayer save my family from such a devastation? I was hooked. Deeply captivated and deeply terrified of natural disasters, I immersed myself in finding out everything I could about Hurricane Katrina. And I didn't stop there—I was fascinated by wildfires, earthquakes, tsunamis—anything with an absurdly high death toll that was chalked up to so-called "natural causes," or as my grandmother would say, "Acts of God."

It wasn't until my second year at Bard that I questioned this macabre interest of mine. My parents would jokingly comment that I have a fascination with death, and that I should be a philosopher. After my moderation into the Historical Studies department at Bard, I realized that this was really more a fascination with life—or surviving in the unlikeliest of odds.

It was Professor Alice Stroup who truly opened my eyes and helped me understand that the two connections between life, death, and natural disasters are structural violence and community resilience. Over the course of three semesters and three classes—PLAGUE!, Famine, and

Environmentalism of the Poor—I realized exactly what I needed to create through this project. The connection between poverty, systemic racism, and environmental injustice is so often obscured by raw statistics and media coverage. I refuse to let survivors of Hurricane Katrina be remembered as looters, as savages, or as victims of their own lack of preparation. In this project, I hope to give a voice to those people—*my* people—who do not have the platform, the time, or the educational background to fight for themselves in an academic context.

For these reasons, I would like to thank the following people: Dr. Alice Stroup, retired professor of Historical Studies at Bard College. Thank you for teaching me, inspiring me, and supporting me in every single way possible. Thank you for all of the time you dedicated to my education inside and outside of the classroom.

To Dr. Jeannette Estruth, it has been a true honor to be your student and your advisee. Thank you so much for undying support and kindness throughout the roughest parts of this project.

To my parents, Drs. Kirk and Willa Johnson, thank you for introducing me to the academic world and making me fall in love with learning from a young age.

Last but certainly not least: to my friends Phoebe Brand, Abby Townend, and Lucy DeCarlo, thank you for always being there to lend an ear and listen to my environmental policy rants.

Dedication

This project is dedicated to Dr. Alice Stroup, who taught me to argue outside of my comfort zone, and to *always* question my sources. Thank you for teaching me that the best historians never accept historical facts at face value, and that our job is not finished until we peer beneath the surface.

Introduction

When Hurricane Katrina made landfall on the Gulf Coasts of Mississippi and Louisiana

on August 29, 2005, it brought with it winds over 100 miles per hour (mph) and a storm surge

over 30 feet.[1] Flooding left much of the New Orleans-Metairie-Kenner metropolitan area

underwater for weeks,[2] destroying the majority of one- and two-family homes, which inevitably

led to mass vacancy and long-term homelessness for the New Orleans residents who were able to

survive the storm. Less than a month later, on September 24, 2005, the same community was hit

by another tropical storm, Hurricane Rita. This lesser-known hurricane was just as powerful as

Katrina, if not more—it carried winds of over 150 mph and a storm surge of over 15 feet.[3] The

hurricane was so detrimental that, according to the American Community Survey of 2005, the

population of the New Orleans metropolitan area dropped from 1,190,615 to 723,830 (a

difference of approximately 39 percent) between January and December of 2005.[4] As shown by

Figure 1, New Orleans-Metairie-Kenner was not the only area so dramatically affected. Gulfport,

Biloxi, and Pascagoula, Mississippi as well as Mobile, Alabama and Lake Charles, Louisiana

also experienced massive flux in population as a direct result of the two hurricanes.

When I first examined these statistics, a few questions immediately came to mind: *Who*

are the affected individuals? Exactly *what* are they feeling the effects of? Should they be

considered survivors or victims, and does this status have to do with the way in which these

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[1] Federal Emergency Management Agency, "Hurricane Katrina in the Gulf Coast: Mitigation Assessment Team Report" (2006), vi, accessed February 11, 2020, https://www.fema.gov/media-library-data/20130726-1520-20490-4067/549_cvr_toc.pdf.

[2] FEMA, "Hurricane Katrina in the Gulf Coast" (2006), vi.

[3] Hurricanes Science and Society Team from the URI Graduate School of Oceanography. "2005- Hurricane Rita" (2010), accessed February 28, 2020, http://www.hurricanescience.org/history/storms/2000s/rita/.

[4] U.S. Census Bureau, "New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area" (2005), accessed February 15, 2020, 1.

disasters were mitigated? Growing up in Mississippi, I am familiar with the rhetoric surrounding

hurricanes and tornados.
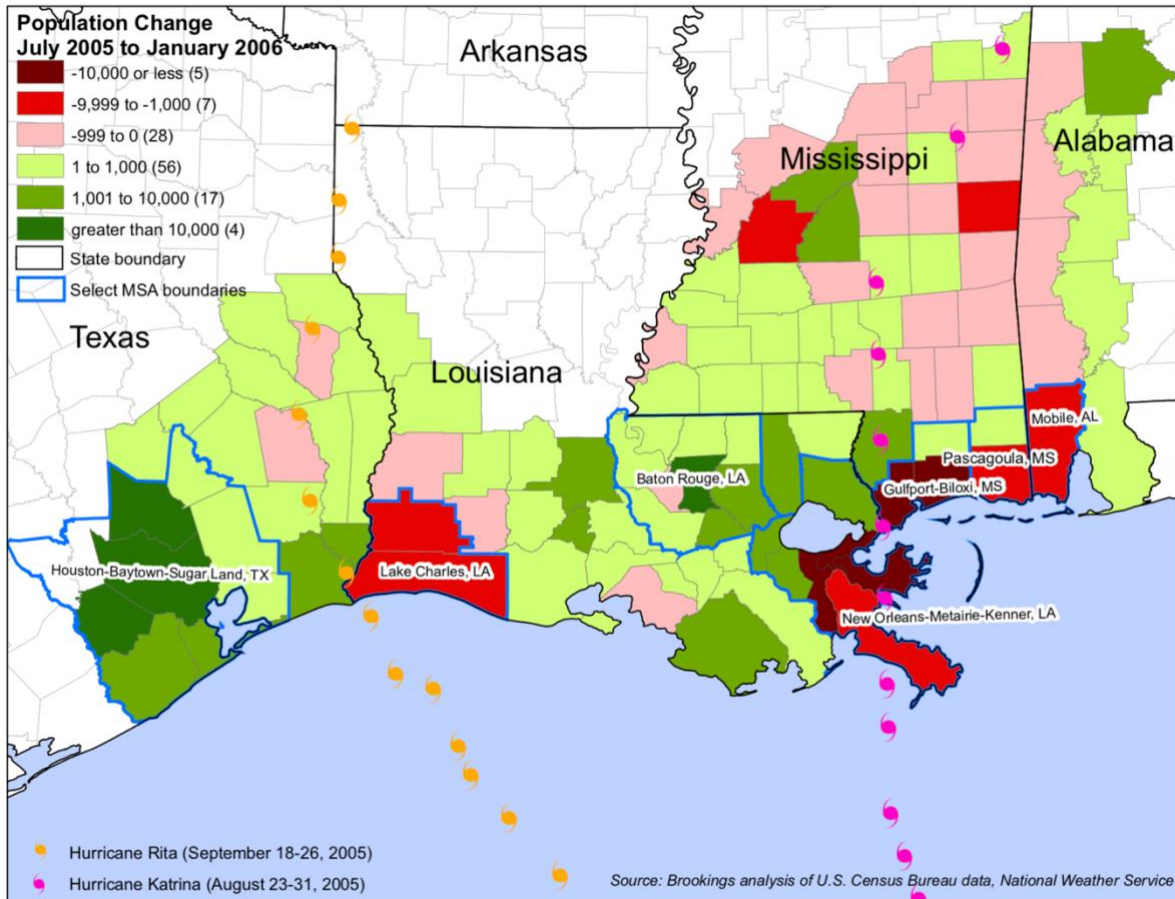
Figure (a). *Population Change due to Hurricanes Katrina and Rita.* It is important to note that this population loss was accompanied by a population increase in southern Texas and in Baton Rouge, Louisiana. [William Frey and Audrey Singer, "Hurricane Impacted Areas of Texas, Louisiana, Mississippi, and Alabama", in "Katrina and Rita Impacts on Gulf Coast Populations: First Census Findings," *Population and Environment,* vol. 31, no. 3 (2006), accessed February 24, 2020, 4.]

Each flash flood warning or tornado watch is met with little concern and deflection; few choose

to evacuate because the cost of evacuation is high, and the financial and emotional stress of

evacuation is never worth it if the storm is not as severe as predicted. Then there was the

anomaly of Hurricane Katrina, which appeared to be just another tropical storm that would pass

with little incident. Many chose not to evacuate, in hopes of protecting their homes, small

businesses, and livelihoods, like Abdulrahman Zeitoun.[5] Others were simply unaware that a

Category 4 storm was rapidly approaching the coast. Others had no means of evacuation.[6]

Years later, Hurricane Katrina has not been forgotten. As a means of coping, the people

of coastal Mississippi and Louisiana choose to laugh about the inadequacies of the Federal

Emergency Management Agency (FEMA) in the wake of the hurricane—when something goes

wrong, whether it be at the hands of the federal government, the local government, or even

something as trivial as a household disagreement, I have heard poor people of color jokingly say

"It's FEMA's fault!" time and time again.

This joke, unfortunately, stems from the reality of the experiences of the poor, the

minorities, and the elderly post-Katrina. Contemplation led me to my next question, which is the

primary focus of this thesis: If the experiences of those affected by a so-called natural disaster

seem to vary based on socioeconomic privilege (or the lack thereof)[7], how can the United States

government still deem severe weather events to be unavoidable acts of God and/or nature?[8]

FEMA and the Army Corps of Engineers (ACE) perpetuate ideas of mitigation after a disaster

destroys a community, but what can be done to prevent these disasters from occurring in the first

place?

In order to answer these questions, I will closely analyze the effects of Hurricanes

Katrina and Rita on the Gulf Coast communities that were most heavily impacted by flooding. In

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[5] Dave Eggers, *Zeitoun* (San Francisco: McSweeny's Publishing, 2009).

[6] Laurie Lola Vollen and Chris Yang, *Voices from the Storm: The People of New Orleans on Hurricane Katrina and Its Aftermath,* (San Francisco: McSweeny's Publishing, 2008).

[7] I am able to use this claim based on the statistical work from the American Community Survey's compilation of data from before and after Hurricane Katrina. It shows that the median income of New Orleans-Metairie-Kenner in 2005 was $39,793, and that the population of color was 40.7%. After the storm, the median income increased to $43,447 and the population of color decreased to 27%. To me, this shows that Hurricane Katrina either killed or forced the migration of people of color and/or poor people disproportionately. U.S. Census Bureau, "New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area" (2005), accessed February 15, 2020, 1.

[8] William Kern, *The Economics of Natural and Unnatural Disasters*, (Kalamazoo: W.E. Upjohn Institute for Employment Research, 2010).

my analysis of the hurricanes, I hope to establish the following two things: First, the historical

identities of the most heavily affected economic and racial groups. If proximity to sea level is

understood as proximity to danger, how does spatial racism (by way of employment and

residential segregation) help us understand the lives of these people before, during, and after

severe storms? How are these two variables informed by lawful discrimination? Second, the

connection between the Gulf's racialized, violently neglectful governmental structures that

informed FEMA and ACE in 2005, and the actual experiences of Katrina survivors. Through

lived experiences of Katrina, how can we identify governmental shortcomings and failed

community resilience tactics?

To establish these ideas, I will look to many historical, anthropological, and sociological

sources. Structural violence, a term coined by Norwegian sociologist Johan Galtung, will frame

this research. Galtung introduces structural violence through four distinctions: physical verses

psychological violence, the existence of a victim, the influence of the violent act on that victim,

and the motivations and identity of the violent actor.[9] The fourth distinction is what is most

valuable to my project—it is easy to find and blame a single actor for intentionally causing harm

to a person or group, but much more difficult to place blame when there is a series of structural

and thus indirect acts that result in the harm of those groups. I think that natural disasters are a

perfect example of indirect violence as Galtung describes it because there is not one person to

blame. Blaming the U.S. government for shoddy mitigation is quite impossible because, to me,

the real violent act is their consistent neglect of certain parts of the country. Of course, neglect is

often argued to be different than intentional violence, but is it that different if the effects are so

similar?

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[9] Johan Galtung, "Vioence, Peace, and Peace Research," *Journal of Peace Research* 6, no. 3 (1969): 169-170, accessed January 20, 2020, www.jstor.org/stable/422690.

I will use *Infections and Inequalities* by Paul Farmer, *Late Victorian Holocausts: El Niño and the Making of the Third World* by Mike Davis, *Mass Starvation* by Alex de Waal, and *Slow Violence and Environmentalism of the Poor* by Rob Nixon as a basis for my understanding of the manifestation of structural violence in post-colonial spaces. These authors do not discuss hurricanes or flooding, but they do write about two other disastrous events that are typically referred to as acts of nature: infectious disease outbreaks and famines. Farmer writes about HIV/AIDS and tuberculosis in poor communities of color and argues that the high concentration of disease in these communities is a direct result of the lack of healthcare infrastructure and dramatic socioeconomic stratification.[10] De Waal and Davis tackle the issue of famine: both argue that famines in the Third World are not only a result of bad harvests, but the result of substandard agricultural structures that can be traced back to colonial institutions.[11] De Waal's argument is of particular interest to me—he theorizes that there is no reason for famines to occur anywhere in the 21st century.[12] There is enough food, he argues, but inconsistencies in food distribution are the leading forces of famine. Similarly, in my final chapter, I hope to argue that there is no reason for future hurricanes to be as destructive to poor communities as Hurricanes Katrina and Rita were—FEMA and the ACE should be held responsible for implementing structures in coastal communities that help residents become more resilient.

Nixon's book draws heavily from the works of Rachel Carson, Edward Said, and Ramachandra Guha to introduce the concept of slow violence, which he defines as "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across

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[10] Paul Farmer, *Infections and Inequalities: The Modern Plagues* (Berkley: Univ. of California Press, 1999).
[11] Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (London: Verso Books, 2001).
[12] Alex De Waal, *Mass Starvation* (Cambridge: Polity Books, 2018), preface.

time and space."[13] Nixon is interested in reconstructing the narrative that surrounds atrocities that are closely associated to Third World or poor (and often post-colonial) communities. In the context of the Gulf post-Katrina, a rewriting of the narrative is necessary—and what I hope to accomplish through this research. Instead of analyzing Hurricane Katrina as a singular event, it should be examined as the climax of slow, infrastructural violence that began during chattel slavery and was bolstered through New Deal and Great Society programs.

The four authors navigate the relationship between the slow violence of colonialism, structural violence, and the ways in which communities of color suffer as a result of these institutional disparities. I hope to model my argument after theirs, by providing the colonial histories of the Gulf and then drawing connections between urban and rural industrial development, ecological flood susceptibility, and community resilience. De Waal, Farmer, and Nixon especially focus on placing blame on governmental agents whose neglect is at the root of any given disaster; they encourage political mitigation in the face of so-called natural disasters, which I plan to do as well.

To further my understanding of urbanization in post-colonial spaces, I will predominantly use Luke Cole and Sheila Foster's book, *From the Ground up: Environmental Racism and the Rise of the Environmental Justice Movement*, Dorceta Taylor's book, *Toxic Communities: Environmental Racism, Industrial Pollution, and Residential Mobility,* and *The Selling of the South: The Southern Crusade for Industrial Development, 1936-1990.* The first two texts closely examine residential segregation and the structural violence surrounding residential mobility. Cole, Foster, and Taylor find that poor people of color are often trapped in once-industrial urban

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[13] Rob Nixon, *Slow Violence and Environmentalism of the Poor,* (Cambridge: Harvard University Press, 2011), 2.

environments by the very industry that attracted them in the first place[14]—once there, if the city's

economy stagnates, its residents have nowhere to go due to the whitewashed, exclusive suburban

communities that surround the industrial zone.[15]

Similarly, in *Development and Social Change*, sociologist Phillip McMichael examines

the motivations for and path of global development and globalization. His greater focus seems to

be the evolution of global food networks and interdependencies, but this source proved to be a

valuable foundational text because he outlines the evolution of a global economy that emerged in

post-colonial spaces. This is important because, although the Deep South was not formally

classified as a part of the Third World, I believe that it represents a sort of regional Third World

in its greater relationship to the rest of the United States. (By this I mean that the South is often

viewed as 'other' by more urban parts of the US. With its past of chattel slavery, its current state

of economic dependency on exports and governmental aid, low standard of living, low literacy

rates and low life expectancies, it seems to fit well into the trope of Third World/Oriental

ideology.[16]) McMichael details the emergence of the World Bank, IMF, and WTO, and the

imbalance of power between countries tasked with exporting agricultural resources and those

that consume the resources, which is crucial in understanding the new industrialization of the

Gulf Coast during and after the Reconstruction period. Though Taylor's and McMichael's

works are not directly referenced in the text, they provided a significant foundation for this

research.

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[14] Luke Cole and Sheila Foster, *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement*, (New York: New York University Press, 2001).

[15] Dorceta E. Taylor, *Toxic Communities, Environmental Racism, Industrial Pollution, and Residential Mobility,* (New York: New York University Press, 2014), 37.

[16] This information largely comes from my personal knowledge that I've gained from growing up in Mississippi and moving to the northeast. Statistical data regarding poverty and mortality rates can be found in the 2010 American Community Survey.

In the case of southern Louisiana and Mississippi, the colonial industry under analysis is the extensive agricultural slave trade. Overwhelmingly, this research relies on data from the 1860 and 1880 Censuses, as well as data from the Agricultural Censuses from the same decades. This data not only shows employment post-emancipation, but also agricultural productivity by state. This data supports the claim that the southern economy supported by the sugar, cotton, and industry is the primary reason for the initial population and urbanization of both of my areas of study. When the slave trade collapsed at the end of the 19th century, and a great deal of previously enslaved blacks moved out of the South, the Gulf was left without a surplus of wage-free workers. Though agricultural industrialism continued, it suffered in the wake of black enfranchisement and the primary industries of the Gulf Coast changed.

In conjunction with Census data, I will be using a lot of articles and a few books about the Gulf Coast's environmental and economic history. Primarily I will use *The Great Deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast*, in which Douglas Brinkley details the socioeconomic and agricultural history of the Gulf Coast, ultimately arguing that New Orleans should not have been occupied by humans in the first place.[17] The dangerously low sea level was known by the city's founders and engineers, but the potential for commerce was so great that this was overlooked and construction of the city persisted.[18] He further argues that the devastation of Hurricane Katrina was greatly amplified because of the man-made landscape that was developed to encourage the slave -based agronomy. Brinkley uses a wide range of primary

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[17] It is important for me to note that I disagree with Brinkley's statement. The land was successfully occupied by indigenous peoples who practice low-risk subsistence agriculture. Preservation of marshland is crucial in surviving such a flood-prone region, and arguably, vulnerability increased alongside colonial landscaping and agricultural practices.

[18] Douglas Brinkley, *The Great Deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast,* (New York: HarperCollins, 2009), 11.

sources from French and Spanish colonizers, as well as sources from those on the scene when Katrina and Rita made landfall.

The Selling of the South, along with Roger Biles' book, *The South and the New Deal* help unravel the Gulf's transition from a plantation-based economy, through the Reconstruction Era, and to the current state of industrialization. Both authors write about the complex relationship between the federal government, local government, and the fluctuating workforce in the wake of the Civil War throughout the 20th century.

From these sources, I am able to understand that the industries that replaced the plantation economy reaffirmed the racialization that developed during the 17th and 18th centuries; after emancipation, southern blacks were confined to low-paying agricultural jobs.[19] When we look at the 20th century, in the Jim Crow Era, like Cobb does in *The Selling of the South,* we see that states like Mississippi and Louisiana petitioned to the rest of the country for more industrial development. In order to do so, local land owners relied on federal and city subsidies to rezone farmland for industrial use—the low cost of land was advertised to business owners across the continent, and owners turned to local communities to supply the workforce.[20] To me, this bares striking resemblance to other colonial business models because the industries were controlled by someone outside of the community that provides the workforce. In effect, these new industries created the exact urban communities about which Taylor, Cole, and Foster write.[21]

This leads me to my next question: What does industrial development have to do with community resilience to hurricanes? Broadly, community resilience is considered to refer to a set of qualities inherent to a community that allow its members to recover from a devastating

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[19] James Cobb, *The Selling of the South: The Southern Crusade for Industrial Development, 1936-1990,* (Chicago: Univ. of Illinois Press, 1993), 116.
[20] James Cobb, *The Selling of the South*, 7.

event.[22] A community formed under a systemically racist government leads to racialized access to housing, employment, and education. A history of the Gulf Coast should include a history of all three of these aspects, as they play different roles in building community resilience. However, the length of this project prevents me from addressing each individually, so the primary focus of my analysis will center around New Deal infrastructure and the workplace. To understand this in times of environmental stress, I will rely largely on the ecological history of New Orleans and surrounding marshland areas that were heavily modified by colonial settlers. Cole and Foster and Farmer explain the inherent precarity of poverty—most people of color in poor communities are so beleaguered by the uncertainty of their day to day life that long-term planning (like planning how and where to evacuate before a storm) is simply not feasible. Brinkley's *Great Deluge* and John Lopez's thesis "The Environmental History of Human-Induced Impacts to the Lake Pontchartrain Basin in Southeastern Louisiana since European Settlement—1718 to 2002" explore the agricultural and environmental ramifications of colonial activity in the Gulf.

This project will close with an answer to my final question: What can the federal government do to ensure community resilience in poor coastal communities? Arguably, it is the federal government's fault (through centuries of environmentally degrading agricultural and industrial practices) that these communities exist; what can be done to prevent further suffering of these endangered groups? Drawing largely from the work of Stijn Temmerman, et al. in their article "Ecosystem-based Coastal Defense in the Face of Global Change," I plan to introduce the concepts of green versus gray infrastructure. Green infrastructure includes the construction of wetlands in the Mississippi basin; theoretically, these wetlands would be able to withstand storm surges and naturally deafen the blow of severe storms as they approach the mainland. In many

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[22] Sonny S. Patel, et al., "What Do We Mean by 'Community Resilience?,'" *PLOS Currents Disasters,* (2017): 8, accessed March 1, 2020, doi: 10.1371/currents.dis.db775aff25efc5ac4f0660ad9c9f7db2.

ways, green infrastructure is an attempt to restore the ecosystem to its pre-colonial condition. Gray infrastructure, like the construction of the levees that infamously failed during Hurricane Katrina, has proven time and time again to be unreliable. Although a historian's job is rarely to predict the future, I will conclude with the argument that the ACE and FEMA should implement green infrastructure along the Gulf Coast and around the Mississippi River to further the Gulf Coast community's ability to endure future hurricanes.

Hurricane Katrina: Natural Disaster or Evidence of Neglect?

The United Nations Office for Disaster Risk Reduction (UNDRR) defines a disaster as an event that interrupts a community's ability to function at a basic level:

> A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic, and environmental losses and impacts.[23]

The office furthers this definition through some distinctions: a small-scale disaster (versus a large-scale disaster) impacts a local community and requires extra-community mediation; a sudden-onset disaster (as opposed to a slow-onset disaster) is one with a threat that "emerges quickly or unexpectedly."[24] The UNDRR specifies that a frequent disaster, which is dependent on the likelihood of the event occurring, can be "cumulative or become chronic for a community or society."[25] In the context of these definitions, I think the UNDRR would define Hurricanes Katrina and Rita as one small-scale, sudden-onset disaster. The Gulf Coast's consistent battering by tropical storms, hurricanes, and flooding (the National Weather Service estimates that about 11 severe storms develop in the Gulf every year[26]) would qualify the region as chronically at risk for such weather events.

The UNDRR's language is important because they use words like 'community' and 'human losses and impacts.' To me, these imply that risk is not only based in location, but it is also based in identity. Age, race, and financial security all play a large role in determining one's

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[23] "Disaster," United Nations Office for Disaster Risk Reduction, 2020, accessed March 5, 2020, https://www.undrr.org/terminology/disaster.

[24] "Disaster," United Nations Office for Disaster Risk Reduction, 2020.

[25] *Ibid.*

[26] National Weather Service, *Gulf Coast Hurricane Preparedness 2019,* Jeffrey Medlin, et al. Mobile: National Weather Service, 2019, online PDF, https://www.weather.gov/media/mob/pdf/GulfCoastHurricanePrep.pdf, (Accessed March 6, 2020).

risk, and one's ability to recover after a disaster. Age is perhaps more self-explanatory than race

or financial security: children and the elderly are less likely to have access to their own

transportation, and are more likely to be physically disabled by a severe weather event. Race and

financial security, on the other hand, are deeply intertwined due to the region's history of

slavery, Jim Crow laws, and the residential, educational, and employment segregation that

followed. This thesis aims to use an analysis of this history to understand the distribution of risk

throughout neighborhoods of coastal Mississippi and Louisiana. To do so, this chapter will

introduce structural violence—a major frame of this project—and then use a case study to

understand the causal relationship between race, class, and risk.

The Justice Map Project uses data from the American Community Survey to construct

maps of race and income throughout the United States. Figures 2.0 and 2.1 have been generated

using this interactive map, and figure 2.2 has been made using the National Oceanic and

Atmospheric Administration's (NOAA) coastal flood exposure map. Figure 2.3 is generated

using the NOAA's model, but overlays coastal flood exposure with poverty levels. Both sources

have been very useful in my research because they allow me to visualize poverty, race, and

regional susceptibility to flooding.
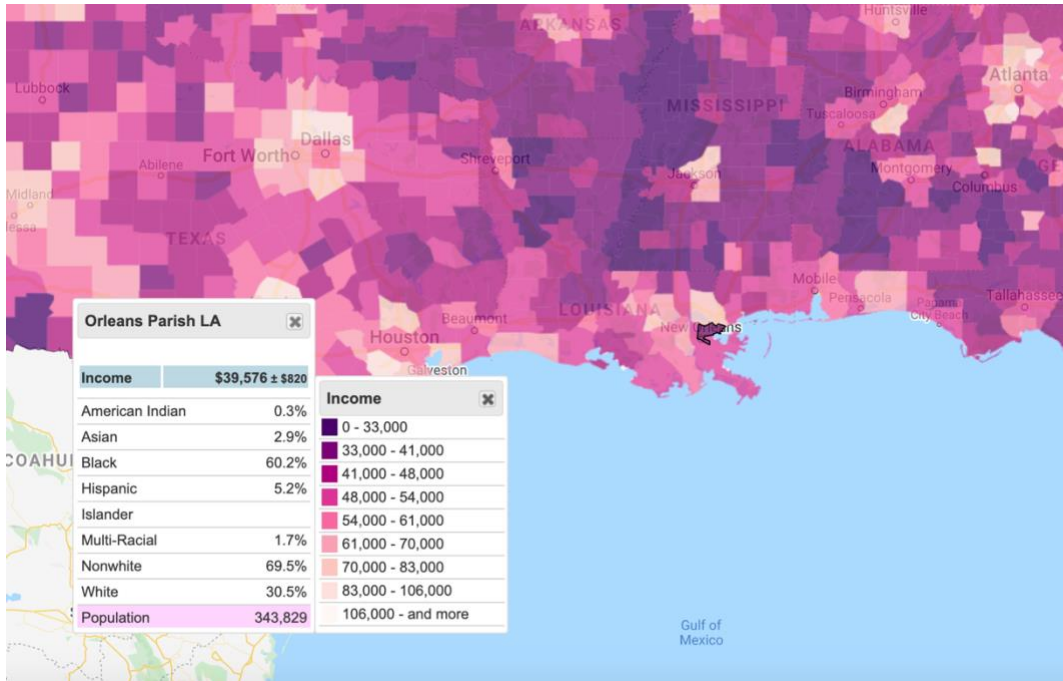
Figure 2.0. *Income in the Gulf Coast, 2020*. [Aaron Kreider, "Justice Map: Visualize race and income for your community and country," justicemap.org, Energy Justice Network and Sunlight Foundation: 2011-2020, using data from the American Community Survey, accessed March 1, 2020, http://www.justicemap.org/index.php.]
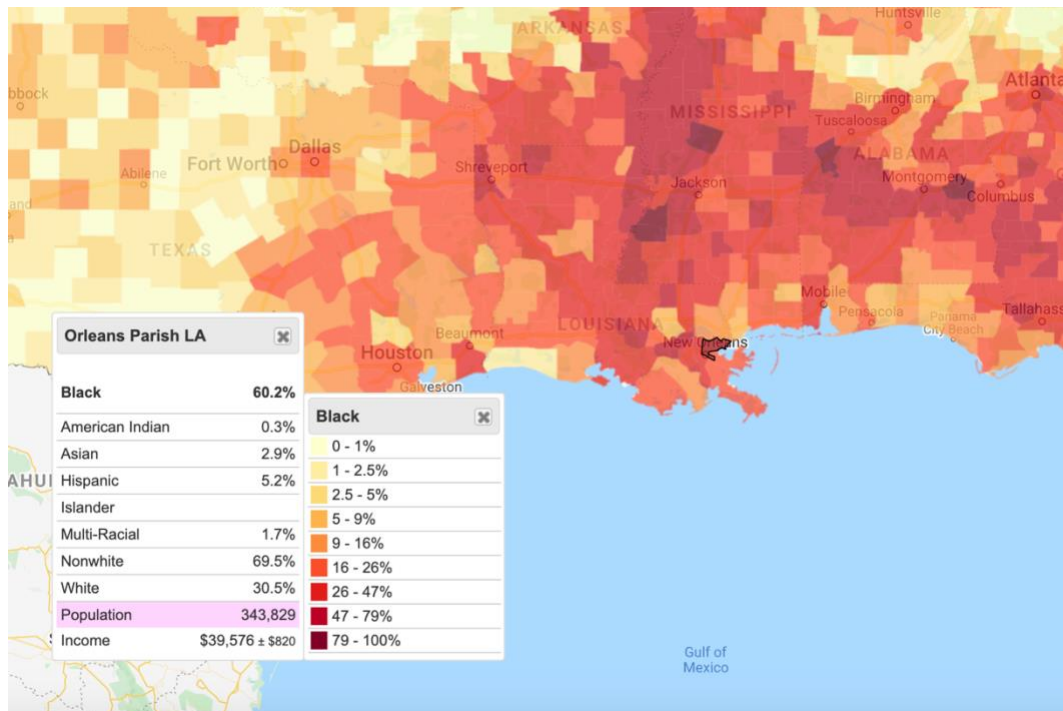
Figure 2.0. *Income in the Gulf Coast, 2020*. [Aaron Kreider, "Justice Map."]

Figure 2.2. *Coastal Flood Exposure Mapper: Coastal Flood Hazard Composite, 2020*. [National Oceanic and Atmospheric Administration, "Coastal Flood Exposure Mapper," DigitalCoast, NOAA Office for Coastal Management, accessed March 1, 2020.]
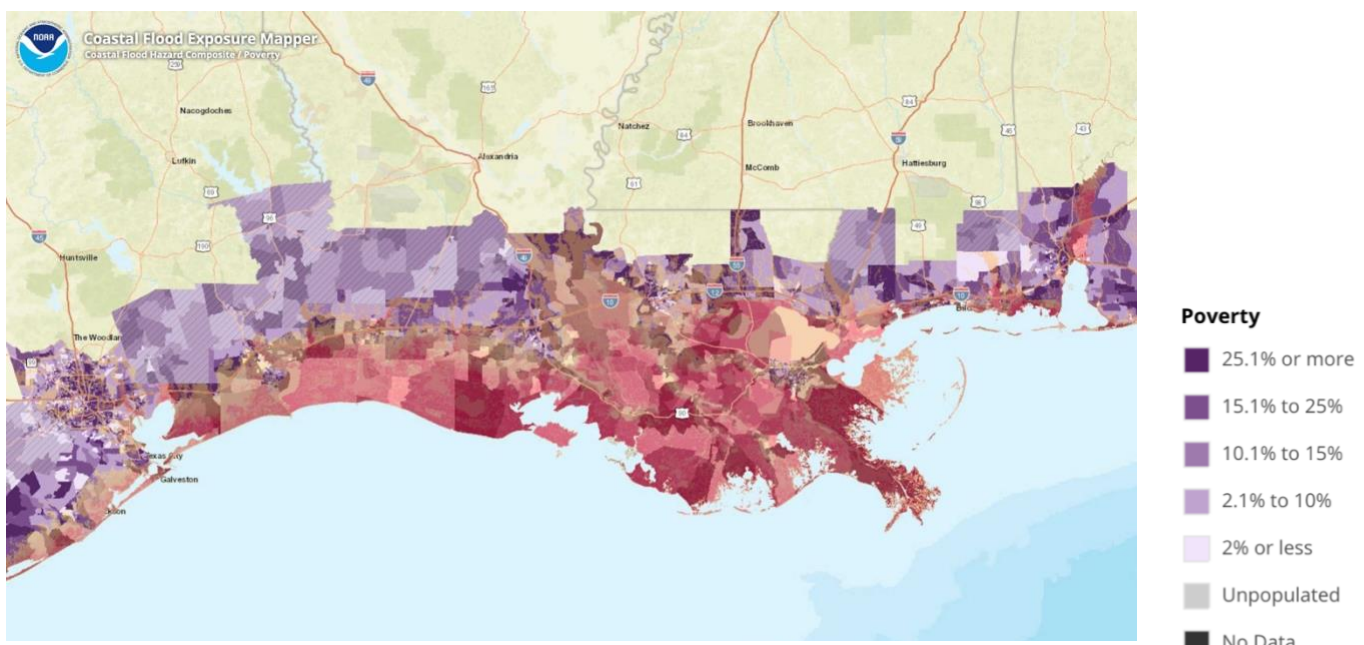
Figure 2.3. *Coastal Flood Exposure Mapper: Poverty and Composite Flood Risk, 2020*. [National Oceanic and Atmospheric Administration, "Coastal Flood Exposure Mapper," DigitalCoast, NOAA Office for Coastal Management, accessed March 1, 2020.]

Of course, one could look at the data presented in these maps and argue that the high concentration of blacks along the coast and high poverty rates are merely a coincidence. Then, they would probably argue that the high risk of flooding in the area is correlation—the observation that change one variable coincides with change in another variable—instead of causation, which implies that the first variable determines the change in the second variable.[27] Though it is true that any coastal population is coincidentally at risk for flooding, the ability of that population to manage the effects of flooding changes depends on the structures in place that allow that community to mitigate damages. For this reason, communities of Mississippi and Louisiana coast require further analysis when assessing flood risk.

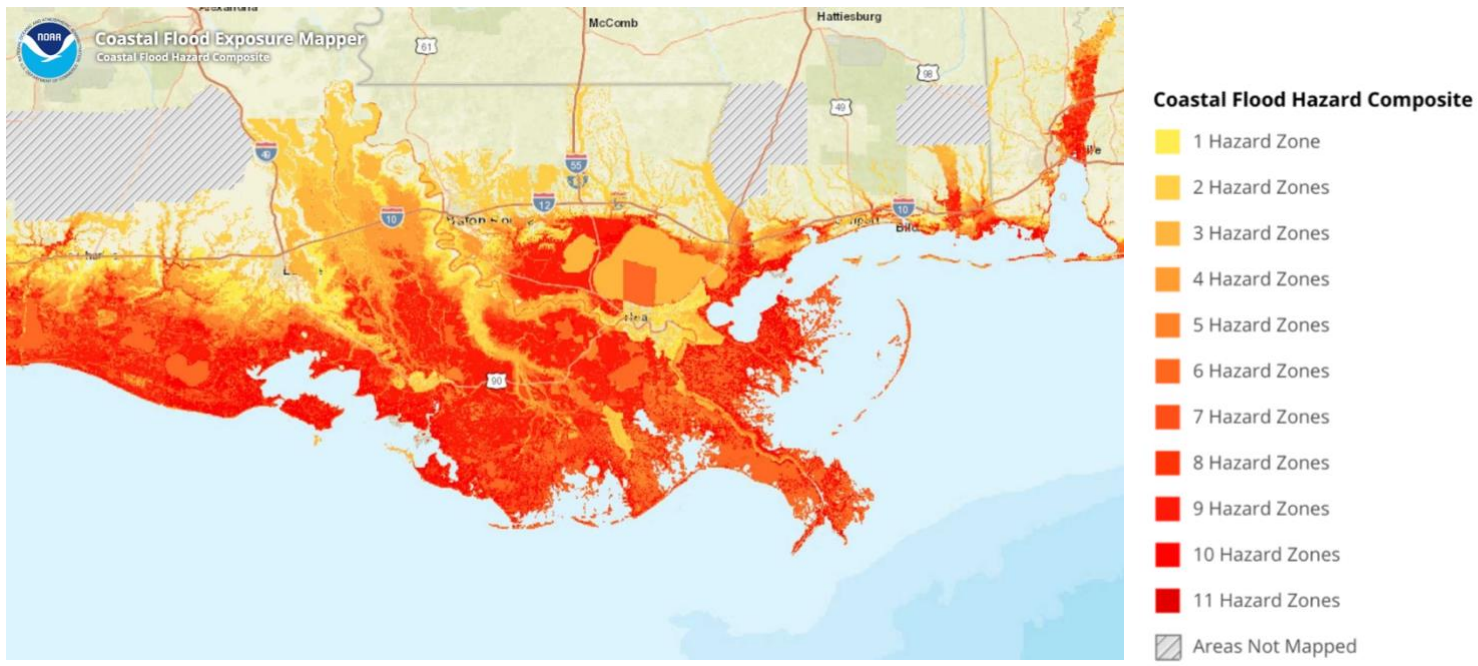Orleans parish,[28] home to the city of New Orleans and the New Orleans-Metairie-Kenner metropolitan statistical area, has a black population of over 60% and the average resident has a yearly income of $33,000-$41,000.[29] Compared to the national average, Orleans parish's black population is roughly four and a half times larger, and the parish's poverty level is about 50 percent lower than the country's median income.[30] Further scrutiny of the history of race, the industrial complex, and intergenerational poverty in the Deep South will take place in Chapter Two. For now, I will use Orleans parish as a case study to answer the following question: What is the causal relationship between socioeconomic status and local and federal risk-mediating

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[27] Jon Witt, *SOC 2009* (New York: McGraw-Hill, 2009), 25.

[28] Louisiana is divided into parishes—a parish is the equivalent to a borough in Alaska, or a county in the other 48 states.

[29] Kreider, Aaron. *Justice Map: Percent African Americans per Capita* and *Justice Map: Income per Capita,* 2020. Commissioned for the Energy Justice Network and Sunlight Foundation, Philadelphia, Pennsylvania, accessed March 15, 2020, http://www.justicemap.org.
It is important to acknowledge that, although Katrina victims were disproportionally people of color, this paper largely focuses on the institutional violence faced by African Americans. Since the United States' history of chattel slavery puts African Americans in a unique position relative to their social networks and local governments, a vast majority of examples and statistics only concern African American community members.

[30] United States Census Bureau, *Quick Facts: United States*, 2010-2019, Maryland: United States Census Bureau, 2019, https://www.census.gov/quickfacts/fact/table/US/INC110218#INC110218, (accessed March 15, 2020).

infrastructures? It is important to acknowledge differences in socioeconomic status because social status determines lifestyle, and lifestyle informs one's ability to be resilient in times of disaster. By first examining this connection through the bounded example of Orleans parish, I will later be able to argue that there is a recognizable pattern of structural violence throughout both rural and urban communities along the Gulf Coast.

Structural violence is a broad term for the ways in which legitimized institutions function that unintentionally prevent certain members of a society from being able to fulfill their needs within that society. How does structural violence function in a society that is deeply embedded with racial injustice and a discriminatory history? Structural violence was coined by sociologist Johan Galtung in his 1969 article "Violence, Peace, and Peace Research," in which he defines violence as "[being] present when human beings are being influenced so that their actual somatic and mental realizations are below their potential realizations."[31] In other words, violence occurs when some institutionalized structure narrows the possibilities of those relying on that institution, regardless of intent.

Galtung continues with an example of structural violence particularly apt for this discussion:

> [The] case of people dying from earthquakes today would not warrant an analysis in terms of violence, but the day after tomorrow, when earthquakes may become avoidable, such deaths may be seen as the result of violence. In other words, when the potential is higher than the actual is by definition *avoidable* and when it is avoidable, then violence is present.
> When the actual is unavoidable, then violence is not present even if the actual is at a very low level.[32]

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[31] Johan Galtung, "Violence, Peace, and Peace Research," *Journal of Peace Research,* vol. 6, no. 3 (1969): 168, accessed March 14, 2020, http://www.jstor.org/stable/422690.
[32] Johan Galtung, "Violence, Peace, and Peace Research," 168-9.

This article was written in 1969. Today, although we understand how climate change increases the likelihood of severe weather events, and we cannot prevent events like earthquakes or hurricanes from taking place, we do have a great deal of autonomy when it comes to mitigating those disasters after they take place. So, I intend to use this chapter to outline different forms of structural violence as it relates to two other natural disasters: famines and epidemics. I will end with a discussion of how structural violence dictates transportation opportunities, which are crucial in understanding a community's response to flooding. Since public transportation is controlled by local and state governments, incomplete evacuation resulting from insufficient transportation is an example of infrastructural violence.

The first framework I hope to repurpose for my work is from Mike Davis' book *Late Victorian Holocausts.* The text focuses on the connection between El Niño Southern Oscillation and famines in post-colonial spaces. Though Davis never references Galtung, he does use structural violence as the basis for his greater argument: to Davis, systemic, infrastructural inequalities are the cause of improper food distribution, which is the cause of famine. In order to argue this, Davis does two things. First, he attacks the Malthusian concept that famines are strictly natural disasters. Malthus, of course, had argued that population would naturally outpace agricultural growth. Davis describes how this ideology was applied realistically in 19th century India:

> The grim doctrines of Thomas Malthus, former Chair of Political Economy at Haileybury, still held great sway over the white rajas… Malthusian principles, updated by Social Darwinism, were regularly invoked to legitimize Indian famine policy at home in England. [Lord] Lytton, who justified his stringencies to the Legislative Council in 1877 by arguing that the Indian population "has a tendency to increase more rapidly than the food it raises from the soil…"[33]

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[33] Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (London: Verso Books, 2001), 32.

The idea that famine is a natural check on population growth is curious to Davis—if El Niño has been causing droughts and floods since the beginning of collectivized agriculture, how did famines look pre-colonization? After looking in countless post-colonial spaces including China and India, Davis finds that there simply were not famines before the regions were under colonial rule. Something about colonial infrastructure disrupted the ways in which these communities were accustomed to preventing and mitigating famines. This brings us to the second part of Davis' argument: that famine is a result of careless governing rather than a lack of food.

For example, in pre-British India, there are only 17 recorded famines in the 200 years prior to British invasion; there were 31 famines during the first 120 years of British rule.[34] Pre-British Indian officials had mechanisms in place to account for droughts and floods that came with El Niño oscillations. These mechanisms largely worked on the premise of subsistence farming and a small trade network—this guaranteed that food reserves in villages were larger, and that a surplus of grain would be better protected from speculation in times of hardship.[35] When Britain forced India into an export-based, larger market, the autonomy of individuals (and thus villages) dramatically declined. Instead of growing food for themselves and members of their community, they were growing food and other raw resources for export. Because of this shift in individual autonomy, there was also a decline in state-level or community-level autonomy—which meant that state-level famine mitigation was impossible unless it was led by the British Raj. [36]

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[34] Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (London: Verso Books, 2001), 287.
[35] *Ibid.,* 285.
[36] *Ibid.,* 290.

Issues of autonomy, both on a state level and on an individual level, are key in understanding community resilience and structural violence. When Galtung wrote that structural violence occurs "when human beings are being influenced so that their actual somatic and mental realizations are below their potential realizations," he was referring to a lack of autonomy—if an institution is occluding one's autonomy, it is a violent institution. Largely, this project is tasked with mapping the violent institutions that surrounded the tragic outcomes of Hurricanes Katrina and Rita. In order to do so, I will rely on Davis' structure for understanding the link between community resilience and post-colonialism, and then I will use Paul Farmer's book as a lens through which I will look at personal narratives of survivors in an attempt to understand the lived experience of structural violence.

In *Infections and Inequalities: The Modern Plagues,* anthropologist-doctor Paul Farmer uses ethnographies to write about the experiences of poor people of color infected with tuberculosis or HIV/AIDS. Farmer relies heavily on Galtung, and for good reason—Galtung writes on page 168 of his article:

> …if a person died from tuberculosis in the eighteenth century it would be hard to conceive of this as violence since it might have been quite unavoidable, but if he dies from it today, despite all the medical resources in the world, then violence is present according to our definition.[37]

Understanding this violence is Farmer's primary concern. He conducts his tuberculosis and HIV/AIDS research predominantly in North and South America, with a focus on Haiti, Peru, and the state of New York in the United States. His interest in the United States is based in the widening income gap, and how this inequality translates to the ability of patients to afford medication and follow a doctor's instructions.[38] He argues that patient compliance and health is

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[37] *Ibid.,* 168.
[38] Paul Farmer, *Infections and Inequalities: The Modern Plagues* (Berkley: University of California Press, 1999), 15.

closely related to the patient's social mobility: many factors influence a patient's decision to visit

a doctor in the first place, and even more factors determine how closely the patient is able to

follow the doctor's instructions. His acknowledgement of these factors—like transportation,

housing, employment, and financial security—is key in identifying which structures neglect

patients, and therefore, crucial in understanding how structural violence functions in healthcare

networks.

Farmer's book relies heavily on the idea that infectious disease outbreaks are largely

social phenomena, and that the best way to reduce suffering is by addressing epidemics and

pandemics through addressing underlying social inequalities. In his introduction he writes:

> [Poverty] and other social inequalities come to alter disease distribution and sickness
> trajectories through innumerable and complicated mechanisms…
>   Poverty and racism increase the likelihood of dire outcomes among the sick by
> restricting access to effective therapy or rendering it less effective if patients are
> malnourished or addicted. Poverty clearly decreases the ability of patients to "comply"
> with demanding, lengthy regimens. Indeed, the advent of truly effective therapies only
> brings into starker relief the centrality of social inequalities, when unequal access to these
> therapies heightens the inequalities of infection…[39]

Though Farmer's model is typically only used in epidemiological work, I hope to use it to

describe the ways in which poverty diminishes a community's ability to implement resilience

tactics encouraged by the Federal Emergency Management Agency (FEMA). Farmer refers time

and time again to the fact that no persons *wants* tuberculosis or HIV/AIDS; an idea of totally

autonomous 'patient compliance' is unrealistic because every patient does not have an equal

ability to comply. Likewise, I argue that no coastal community wants to deal with frequent,

small-scale, sudden-onset disasters; the ability for a community to properly prepare and evacuate

before a hurricane relies on the transportation and financial infrastructure available to the

community. Furthermore, no coastal community wants to be burdened with the devastation

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[39] Paul Farmer, *Infections and Inequalities* (Berkley: University of California Press, 1999), 13-14.

caused by flooding for months after a hurricane hits; resilience is directly related to the financial means of that community.

There are two direct ways in which structural violence interferes with social mobility along the Gulf Coast: in employment and in housing. The Jim Crow laws that encouraged segregation in domestic, educational, and professional spheres, persisted in the Deep South for the latter half of the 19th century and much of the 20th century, and made it difficult (if not impossible) for blacks to get the same jobs or live in the same neighborhoods as whites. (I will provide an in-depth analysis of how chattel slavery and Jim Crow laws led to the development of violent infrastructure in Chapter Three. For now, I will use this basic understanding to hypothesize about the ramifications of unequal opportunity.) One's autonomy is determined directly by their employment opportunities: where the person is employed dictates their income, and housing and transportation investments are made according to income. In the context of a hurricane, access to housing that will survive a storm is crucial, and transportation in the event of evacuation is even more important for immediate survival. Without equal opportunity to both, disadvantaged community members—in this case, poor black people—will suffer disproportionately in the wake of a storm.

Let us return to the example of Orleans parish, where the percent of persons in poverty is twice the national average.[40] According to the United States Federal Highway Administration, there is one private vehicle registered to every two and a half Louisianans;[41] in New Orleans

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[40] United States Census Bureau, *Quick Facts: New Orleans city, Louisiana*, *2014-2018*, Maryland: United States Census Bureau, 2019, https://www.census.gov/quickfacts/fact/table/US/INC110218#INC110218, (accessed March 31, 2020).

[41] United States Department of Transportation, Federal Highway Administration, *State Motor Vehicle Registrations-2015,* Washington D.C.: Federal Highway Administration, 2017, https://www.fhwa.dot.gov/policyinformation/statistics/2015/mv1.cfm, (accessed March 30, 2020). This number was calculated by dividing Louisiana's adult population in 2018 (3,588,183) by the number of registered private vehicles in the state of Louisiana (1,409,821).

alone, 81 percent of households have access to a car.[42] The Louisiana Department of

Transportation reports that there is "rural public transportation" in 34 of the 64 parishes, and

"urban and small urban transit systems" provided within 12 parishes.[43] The American Public

Transportation Association reports that there are 18 of these public transportation hubs in

Orleans Parish, not including various Amtrak, Megabus, and Greyhound lines that support

intercity travel. Of these, one is designated to airport ground transportation, and six are devoted

to transporting the elderly or disabled.[44] But how widely used are these transportation methods?

Are they accessible to the lower-middle class worker?

Unfortunately, the consensus is no—even after years of renovations and improvements,

the New Orleans transportation industry was still failing the working class as of 2019. The

rider's alliance Ride New Orleans has taken on the annual project of mapping shortcomings in

the city's public transportation model. In a 2018-19 survey, they found that only 12 percent of

workplaces could be reached in 30 minutes or less via public transport, and that busses were late

74 percent of the time.[45] This starkly compares to the fact that 89 percent of the region's jobs

were reachable by car.[46] When we look at the data as a whole, it concludes that 19 percent of

New Orleans residents are reliant on a public transport system, which is only providing efficient

transport in 88 percent of commutes, and timely transport 26 percent of the time. Essentially, the

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[42] Ride New Orleans, "About," New Orleans: Ride New Orleans, https://rideneworleans.org/about/

[43] United States Department of Transportation, Louisiana Department of Transportation and Development. *Louisiana Statewide Transportation and Development as of 2015,* Baton Rouge: Louisiana Department of Transportation and Development, 2015, http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Multimodal/Transportation_Plan/2015_Statewide_Transportation_Plan/04_Transportation%20in%20Louisiana.pdf, (accessed March 30, 2020), 4-1.

[44] American Public Transportation Association, *Louisiana Transit: Larger Transit Agencies,* Washington D.C.: American Public Transportation Association, https://www.apta.com/research-technical-resources/public-transportation-links/louisiana/#a2, (accessed March 30, 2020).

[45] "The State of Transit 2019." Ride New Orleans. Ride New Orleans, 2019. Accessed April 1, 2020. https://rideneworleans.org/the-state-of-transit-2019/.

[46] "The State of Transit 2019." Ride New Orleans.

New Orleans transit system is only regularly effective for about .6 percent of the population—a miniscule 5,500 people.[47] The other 18.4 percent have to deal with regularly late busses and streetcars or unavoidable, lengthy commutes.

The transportation issue becomes even more complicated when we consider neighborhood development in and around the urban center. Figure 2.3 is a map of all bus and streetcar lines in the metro area, and figure 2.4 is a map of low-wage workers.
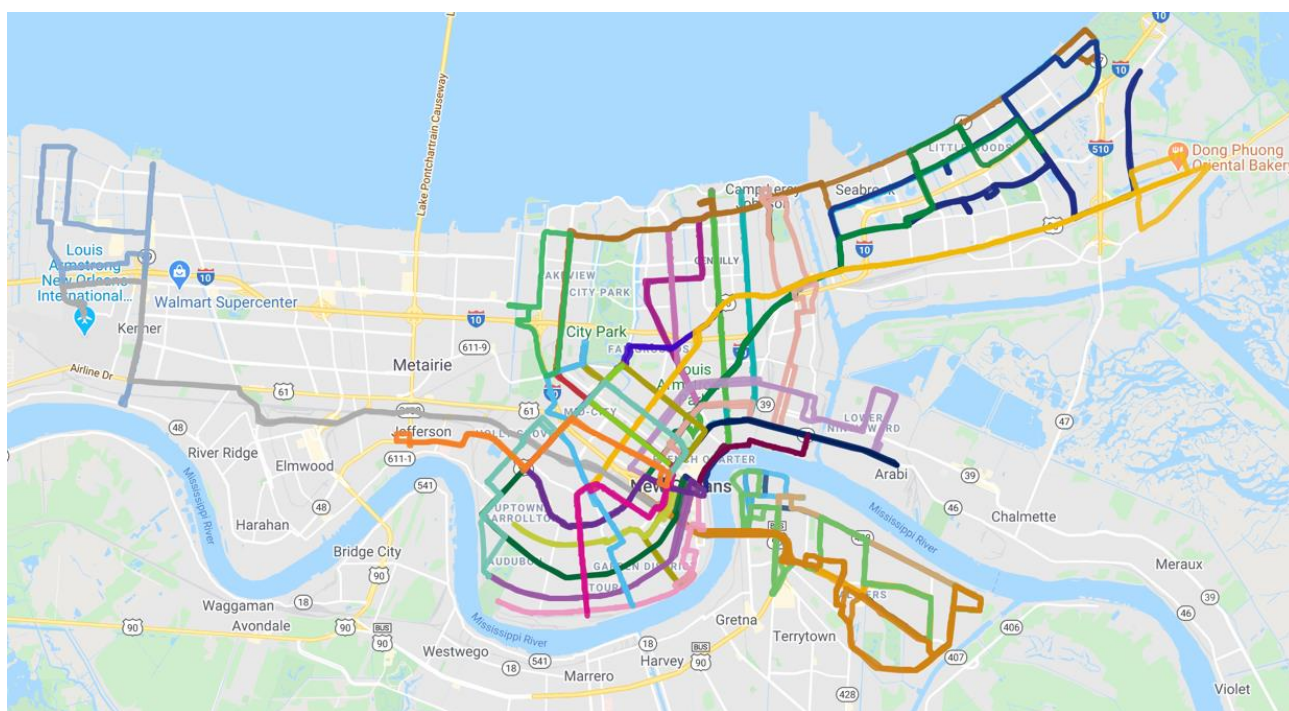
Figure 2.3. *2020 New Orleans Regional Transit Authority System Map*. This map shows all active bus and streetcar lines in the city of New Orleans. [New Orleans Regional Transit Authority, "Maps & Schedules," New Orleans Regional Transit Authority, accessed March 1, 2020, https://www.norta.com/Maps-Schedules/System-Map.]

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[47] I did this calculation by multiplying the percent of New Orleans residents who rely on public transportation (19%) by the percentage of workplaces reachable in under 30 minutes (12%) by the rate of timeliness (74%). I consider any commute over 30 minutes and every late bus or train to be inefficient.
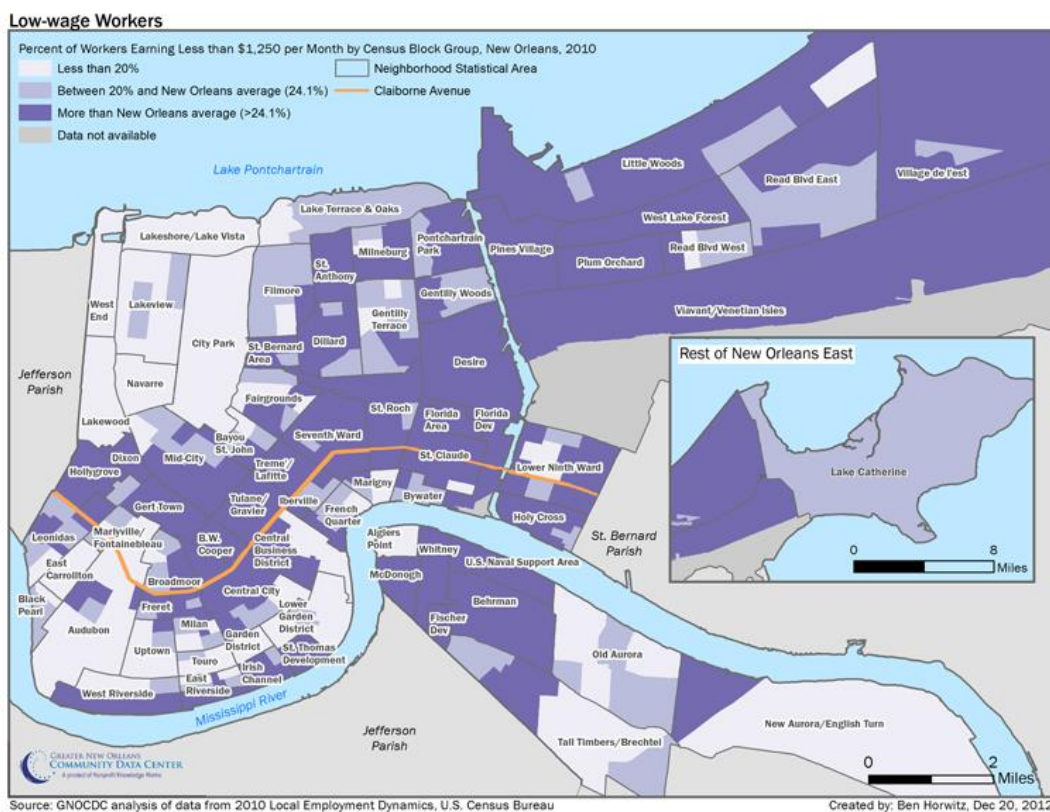
Figure 2.4. *Low-wage Workers in New Orleans*, *2012*. [Ben Horwitz, *Low-wage Workers,* 2012, online map created using data from the 2010 U.S. Census, part of "Geographies of Poverty," accessed March 1, 2020, https://www.datacenterresearch.org/maps/poverty/.]

The majority of lines cater to the innermost parts of the city, around the Central Business Center and the French Quarter, which are the two richest neighborhoods west of City Park, despite having such high concentrations of low-wage workers. As we can see from the maps, low-wage workers are as concentrated in the city's poorest neighborhoods, like the Lower Ninth Ward and Little Woods, but the transit lines are much less numerous. For example, there are only two lines that circle the Lower Ninth Ward, but there are seven that surround the French Quarter.

The point of this lengthy analysis is not only to show that transportation and employment opportunity are closely linked, but to pose a greater question: If 18.4 percent of New Orleanians rely on a transportation system consistently fails them, what are they supposed to do in times of

evacuation, when having access to transportation is mandatory? Even though the public transportation system in New Orleans has greatly improved since 2005, it is still leaving 18.4 percent of its dependents dissatisfied.

The neglected 18.4 percent is clear evidence of state-enforced structural violence. Those 925,000 people are robbed by their autonomy on a daily basis—simply by not being able to show up to work on time. In the aftermath of a disaster, the effects of structural violence are exacerbated. Flooding from Hurricane Katrina damaged 200 of Orleans parish's 372 buses, 30 out of 66 streetcars, and four out of five of the Regional Transit Administration's facilities.[48] The resulting effects on the community were both short and long-term—during Katrina and in the month before Rita made landfall, public transportation was not a reliable means of evacuation. A pre-Katrina contingency plan instructed any remaining buses to transport residents from their flooded homes North, to places like Baton Rouge or Baker, Louisiana.[49] However, a day before Katrina hit the coast, the New Orleans Office of Emergency Preparedness decided that, in light of clogged highways, it would be safer to transport residents to the nearby Superdome.[50] The plan was then to transport evacuees from the Superdome out of Orleans parish entirely, with some buses taking evacuees to northern parishes or out of state after the storm passed.[51] This last-minute decision to move residents to the Superdome proved to make the evacuation process an even more complicated and largely ineffective task. On more than one occasion, buses got

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[48] *Hearing Before the Subcommittee on Highways, Transit, and Pipelines of the Committee on Transportation and Infrastructure,* (109-39), (Washington, D.C., 2005), statement of William Deville, New Orleans Regional Transit Administration, https://www.govinfo.gov/content/pkg/CHRG-109hhrg25919/html/CHRG-109hhrg25919.htm, (accessed April 1, 2020).

[49] Laura Sullivan, "How New Orleans' Evacuation Plan Fell Apart," National Public Radio, September 23, 2005. https://www.npr.org/templates/story/story.php?storyId=4860776 (accessed April 1, 2020).

[50] Laura Sullivan, "How New Orleans' Evacuation Plan Fell Apart."

[51] *Ibid.*

trapped in high water, or crashed in transit;[52] furthermore, those people who ended up in the Superdome were subjected to less than humane conditions (which I will detail in Chapter Four).

To make matters more complicated, FEMA waited until after the storm was over to arrange for buses, and it was the state of Louisiana's responsibility to find buses to satisfy FEMA's estimates. FEMA supported the decision to move residents out of the Superdome, but they did not provide any support to bus drivers. On top of having to provide their own buses, drivers were not allowed to transport evacuees at night and drivers were not able to find armored escort.[53] Eventually, a hundred thousand people (roughly 21 percent) were evacuated from New Orleans *after* the storm.[54] It is uncertain how many people boarded buses with limited rations and the expectation that they would be transported away from the city, only to die waiting for evacuation in the Superdome. Despite this, the evacuation of New Orleans during and after Hurricane Katrina was viewed by governmental officials as a success; not because evacuation efforts minimized human suffering, but because more people were able to evacuate than state officials thought was possible.[55] In other words, local and federal officials were operating under the assumption that full evacuation was never feasible. These structural shortcomings and oversights—both in state and federal management—led to the prolonged suffering of those that traditionally relied on New Orleans public transport.

Because it is the most urban region along the Gulf Coast, Orleans parish has a higher proportion of residents under the poverty line, and has a more functional and widely-used public

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[52] *Hearing Before the Subcommittee on Highways, Transit, and Pipelines of the Committee on Transportation and Infrastructure,* (109-39), (Washington, D.C., 2005), statement of William Deville, New Orleans Regional Transit Administration, https://www.govinfo.gov/content/pkg/CHRG-109hhrg25919/html/CHRG-109hhrg25919.htm, (accessed April 1, 2020).

[53] Laura Sullivan, "How New Orleans' Evacuation Plan Fell Apart."

[54] *Ibid.*

[55] Brian Wolshon, "Evacuation Planning and Engineering for Hurricane Katrina," *The Bridge: Linking Engineering and Society* vol. 36, no. 1 (2006): 27-34, accessed April 1, 2020, https://www.nae.edu/File.aspx?id=7393&v=932df41, 28.

transport system; thus, it provides a unique example of post-disaster structural violence. This is

not to say that limitations in transportation infrastructure were more prevalent in New Orleans,

but to say that structural violence presents itself differently in rural and urban spaces.

In other Gulf Coast communities, evacuees were tasked with different struggles. Neither

Mississippi nor Alabama have robust public transport systems—according to a 2013 survey of

public transit ridership, Mississippians and Alabamians constitute approximately .09 percent of

the country's public transport riders.[56] Even though this information suggests that most living in

coastal Mississippi or Alabama do not rely on public transportation in their everyday lives, those

residents were faced with a different disadvantage when Hurricane Katrina hit. Many residents

trying to evacuate were caught in standstill traffic, and were forced to return home.[57] Evacuation

after the storm was made difficult by flood damage. I-10 (figure 4.0), the interstate connecting

southern Louisiana to the eastern half of the United States, was critically damaged in the storm.

The 18 lanes of interstate that allowed travel between Biloxi, Mississippi and Mobile, Alabama

had been reduced to five, and only two of the five lanes allowed for eastward travel.[58] In

Alabama, storm surge from the coast was not the primary cause of concern; flooding from the

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[56] Bureau of Transportation Statistics, United States Department of Transportation, *Urban Transit Ridership by State and Transit Mode,* National Transit Database, 2015, excel spreadsheet, https://www.bts.gov/content/urban-transit-ridership-state-and-transit-mode (accessed April 1, 2020).
In 2013, there were 10,351,277,000 unlinked passenger trips in the United States. 7,514,000 of those trips took place in Alabama, and 1,981,000 took place in Mississippi.
[57] Ralph Blumenthal, "Miles of Traffic as Texans Heed Order to Leave," The New York Times, September 23, 2005, https://www.nytimes.com/2005/09/23/us/nationalspecial/miles-of-traffic-as-texans-heed-order-to-leave.html (accessed April 1, 2020).
[58] *Hearing Before the Subcommittee on Highways, Transit, and Pipelines of the Committee on Transportation and Infrastructure,* (109-39), (Washington, D.C., 2005), statement of William Deville, New Orleans Regional Transit Administration, https://www.govinfo.gov/content/pkg/CHRG-109hhrg25919/html/CHRG-109hhrg25919.htm, (accessed April 1, 2020).

Mobile River rendered the I-10 and I-65 junction inaccessible (figure 4.1), making it virtually

impossible to leave southwestern Alabama.[59]

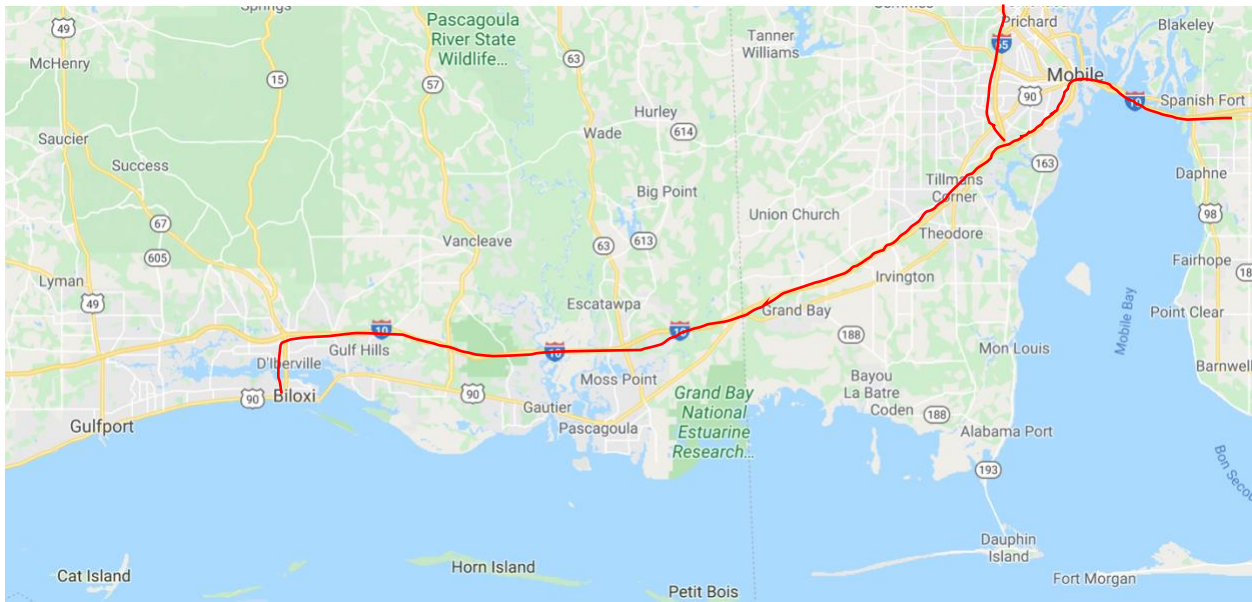Figure 2.5. *Map of the Gulf Coast, 2020*. Interstate 10 is outlined in red. Google Maps, *Gulf Coast,* 2020, screenshot of Google Maps accessed online on March 1, 2020, maps.google.com.]
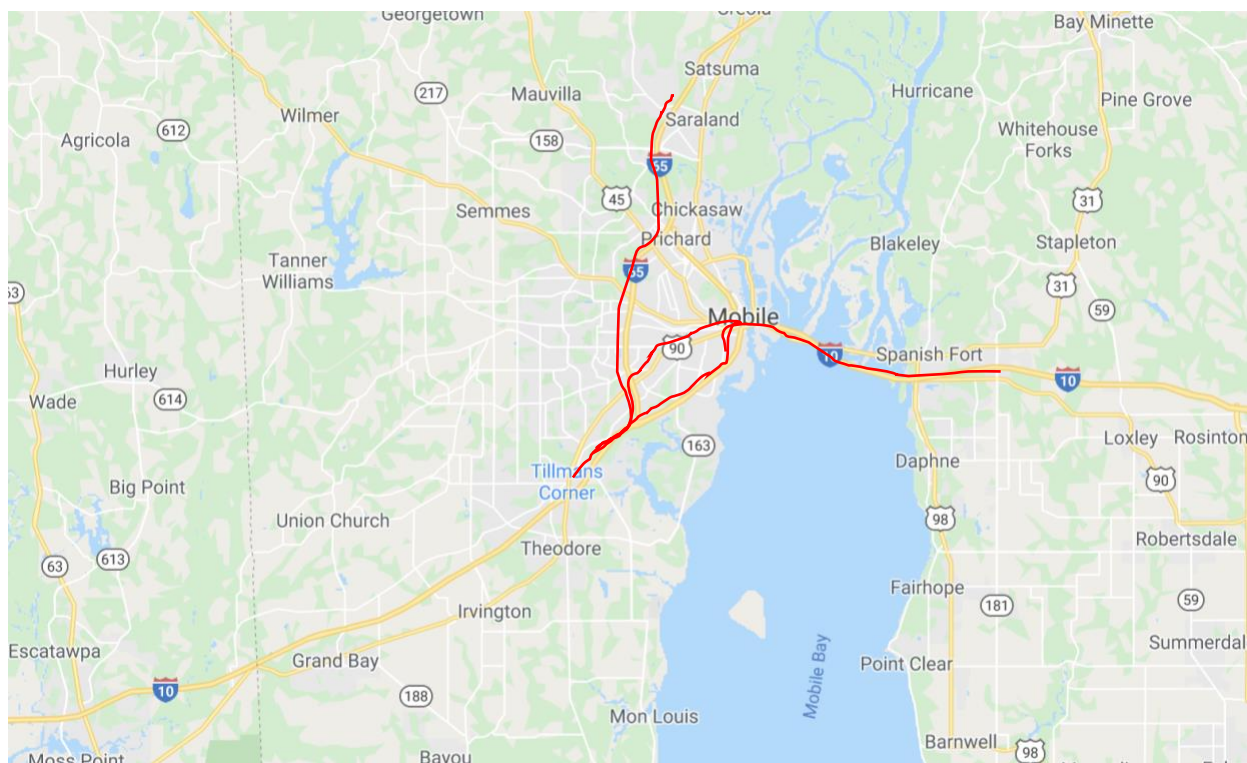

Figure 2.6. *Map of the Mobile Bay, 2020*. The Interstate 10-Interstate 65 junction is outlined in red. [Google Maps, *Mobile Bay*, 2020, screenshot of Google Maps accessed online on March 1, 2020, maps.google.com.]

In sum, this combination of structural failures could have been avoided. If officials on a state level are aware that "roadways are not even designed to be delay-free under routine peak-period conditions," it should be clear that those roadways will not withstand traffic levels during an evacuation.[60] For years, federal and state officials were aware that their transportation infrastructure was not designed to meet the demand posed by a hurricane as powerful as Katrina. Instead of petitioning for and getting federal or private aid to bolster their evacuation procedures, these shortcomings were ignored. If it is known that some residents have access to transportation that other residents do not, and no governmental intervention takes place, every storm will have a disproportionately large impact on the group that is unable to evacuate. This pattern of decisive neglect is the essence of structural violence. It is not enough to recognize the effects of structural violence after the fact, so Chapter Three will trace the colonial origins of inequality in the workplace, which seems to be a basis for housing and transportation inequalities, and how certain modern infrastructures maintain this discrimination.

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[60] Brian Wolshon, "Evacuation Planning and Engineering for Hurricane Katrina." 28.

New Orleans, Levees, and Ecological Resilience in the Context of the Transatlantic Slave Trade,
1718-1863

The structural inequalities faced by poor residents of color in Gulf Coast communities—

most notably in housing, employment, and access to transportation—emanated from the region's

colonial and environmental history. This chapter will examine two periods and turning points

from 1718 to the 1930s: First, I will use secondary sources like *The Great Deluge: Hurricane

Katrina, New Orleans, and the Mississippi Gulf Coast* and John Lopez's environmental history

of the Pontchartrain Basin (1718-2002) to tell the story of the Gulf's environmental history after

settlement by European colonizers. For the sake of continuity, this section will explain how man-

made environmental altercations increased the region's vulnerability to severe flooding. Second,

alongside secondary sources, I will look to the 1860 Census to tell a history of Mississippi,

Louisiana, and Alabama's agroeconomic output when enslavement was at its peak, just before

emancipation. Census data is helpful because it is a compilation of population and occupation

statistics, and because federal and state infrastructure are developed using the Census. Tracing

the historical roots of infrastructural inequalities is impossible without understanding how and

for whom these structures were designed. Furthermore, a crucial aspect of spatial development is

the ability to stake claim, and over the course of the region's history, those who directly profited

from the land differed from those who labored on it.

The environmental degradation of the Gulf Coast began in 1699 with the French invasion

of a tract of land called Chinchuba by the indigenous Chahta Yakni (Choctaw).[61] We know that

tropical storms were expected in the Caribbean because the English word 'hurricane' derives

primarily from the Taíno word 'huracán.' Hurácan was the Taíno god of destruction; to avoid his

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[61] Douglas Brinkley, *The Great Deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast* (New York: HarperCollins, 2007), 6.

wrath, they held prayer rituals and had a fishing season that peaked in early winter.[62] Widespread

knowledge of these storms in the Caribbean Sea and Gulf of Mexico is clear—the word

'huracán' is one of many others like *hunrakán, yuracán, yerucán,* and *yorocan* that were used

around the Yucatan peninsula.[63]

In the French Antilles, there was a notable exchange of hurricane knowledge between

indigenous peoples and colonizers: work published by Italian and French contemporaries in the

16th and 17th centuries show a merge of indigenous and European knowledge.[64] However, in the

Gulf of Mexico, this exchange of knowledge simply did not occur—likely because Europeans

viewed the Gulf of Mexico as an entirely different environment than what surrounded islands in

the Caribbean.

After the Louisiana Purchase in 1803, the United States government encouraged white

settlement in the Southeast, and the Chahta Yakni were pushed to the outskirts of their land (and

eventually farther West with the 1830 signing of the Indian Removal Act).[65] In September of

1830, the Chahta Yakni signed the Treaty of Dancing Rabbit Creek, which forced them to

migrate to Oklahoma's Red River over the next two decades.[66]

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[62] Tristan Korten, "The Bahamas and the Caribbean Have Withstood Hurricanes for Centuries," Smithsonian Magazine Online (2019), https://www.smithsonianmag.com/history/bahamas-and-caribbean-have-withstood-hurricanes-centuries-180973157/, (accessed August 20, 2020).

[63] Eleonora Rohland, "Hurricanes on the Gulf Coast: Environmental Knowledge and Science in Louisiana, the Caribbean, and the United States, 1722-1900" in *Global Scientific Practice in an Age of Revolutions, 1750-1850* (Pittsburgh: University of Pittsburgh Press, 2016), 43.

[64] Eleonora Rohland, "Hurricanes on the Gulf Coast: Environmental Knowledge and Science in Louisiana, the Caribbean, and the United States, 1722-1900," 43.

[65] O'Brien, Greg, "Mushulatubbee and Choctaw Removal: Chiefs Confront a Changing World," Mississippi History Now. Mississippi Historical Society: 2001, accessed May 1, 2020, http://www.mshistorynow.mdah.ms.gov/articles/12/mushulatubbee-and-choctaw-removal-chiefs-confront-a-changing-world.

[66] [Douglas Brinkley, *The Great Deluge*, Chapter 1.] Douglas mentions multiple times that Bienville relied on the advice of indigenous peoples to determine the safest, driest spot to settle.

Of course, the Chahta Yakni were not the only indigenous group living on the Gulf

Coast. The Lake Pontchartrain Basin was shared by the Chahta Yakni, Houma, Chitimacha,

Opelousas, Atakapa, and Natchez peoples. On the East, the Chahta Yakni were neighbored by

the Mvskoke (Muscogee Creek) in present-day Alabama (Figure 5).
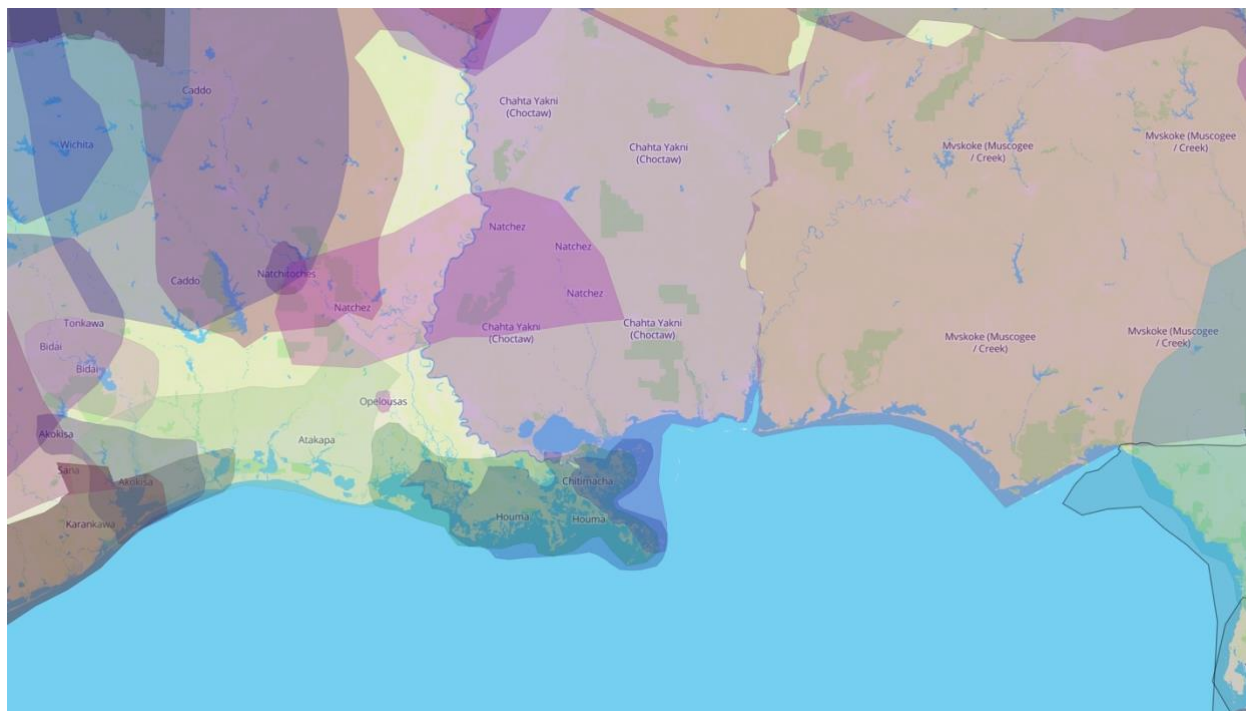
Figure 3.0. *Pre-Colonial Map of Indigenous Populations in the American South.* [Victor Temprano, "Native Land," nativeland.ca, Native Land Digital: 2015, native-land.ca.]

There is no way that the Gulf Coast would be so densely populated without some sort of local

hurricane knowledge. When indigenous people were forced off of their land, they took their

knowledge of floods with them.[67]

Another explanation for the disconnect in the exchange of hurricane knowledge between

native peoples and colonists is the dramatic landscaping that took place during European

settlement. Indigenous groups before 1718 slightly modified the land through land clearing and

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[67] Eleonora Rohland, "Hurricanes on the Gulf Coast: Environmental Knowledge and Science in Louisiana, the Caribbean, and the United States, 1722-1900," 43.

the construction of middens for waste disposal, but the most dramatic changes did not occur until European colonization.[68] Any information that *was* passed along from indigenous people applied to the landscape prior to any wetland destruction; after significant modification with levees, the region is starkly different than it was when it was occupied by indigenous peoples.

In 2003, geologist John Lopez created a database of environmental impacts within the Pontchartrain basin.[69] Lopez measures the Functionality Capacity Indexes (FCIs) of internal and external hydrology,[70] water quality, and the loss of keystone species to calculate what he calls the "Environmental Functionality Index."[71] He has divided the past two centuries into "five periods of activity" and applies this formula to each, accounting for the addition of levees and other flood prevention mechanisms (Figure 6.0).

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[68] John Lopez, "The Environmental History of Human-Induced Impacts to the Lake Pontchartrain Basin in Southeastern Louisiana since European Settlement—1718 to 2002" *Journal of Coastal Research* no. 54 (Fall 2009): 1-11, accessed August 21, 2020, https://jstor.org/stable/25737464.

[69] It is important to note that there was very little record-keeping about the ecological status of the basin prior to the mid 20th century, so it is hard to gauge a baseline for ecological health. This database was created in hopes that one could work backwards with this information, in order to reconstruct the history of Lake Pontchartrain.

[70] Hydrology refers to the mechanisms by which riverine and estuarine processes like tides, sediment deposit and erosion, etc. that result in the creation of wetland and deltaic areas.

[71] This formula is $[(FCI_1 + FCI_2)/2 * (FCI_3 + FCI_4)/2 * FCI_5 * FCI_6]^{1/4}$ with the FCIs respectively referring to nutrient input and output; sediment input and output; external hydrology, which differs from internal hydrology only in times of inundation or flooding; internal hydrology, water quality; and the impact on species in upland forests, forested wetlands, marshes, Lake Pontchartrain, and on the Barrier Islands.

FCI_1 and FCI_2 are averaged arithmetically because either can successfully sustain a wetland through the acquisition of nutrients via sedimentary deposition. FCI_3 and FCI_4 are measured arithmetically for a similar reason—an estuary can be sustained by a properly functioning external and/or internal hydrology. Both must be measured arithmetically because the ecosystem relies on at least two of the four values to be greater than zero, and the two sets of variables are not necessarily contingent on one another. (For example, a sustainable estuarine system requires at minimum a functioning external hydrologic system or internal hydrologic system; either one can maintain functionality, but the ecosystem requires at least one or the other.)

FCI_5 and FCI_6 are measured geometrically because both water quality and a loss of biodiversity can reduce the functionality of an ecosystem independently from the other variables.

For further understanding of the model, I strongly recommend consulting Lopez (2003) and (2009). [John Lopez, "Chronology and Analysis of Environmental Impacts within the Pontchartrain Basin of the Mississippi Delta Plain: 1718-2002," 91.]

Lopez uses these formulas to estimate potential wetland growth without levees, and compare it to the cumulative loss of wetland areas (growth stunted by levees or landscaping). He finds that, from 1812-2002, the Pontchartrain Basin lost a cumulative 141 sq. miles of wetland areas—85% of this was due to levees preventing wetland growth, and the other 15% was a direct result of removal through landscaping that occurred over 2 centuries of agroindustrial activity (Figure 6.1).[72]

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[72] This is model is only intended for use regarding Pontchartrain, but this sort of levee landscaping was not limited to the Lake Pontchartrain Basin. Thus, it is suitable to estimate that other regions along the Gulf Coasts of Alabama and Mississippi experienced a similar plight.   [John Lopez, "Chronology and Analysis of Environmental Impacts within the Pontchartrain Basin of the Mississippi Delta Plain: 1718-2002," (a dissertation submitted to the Graduate Faculty of the University of New Orleans, 2003), 116.]

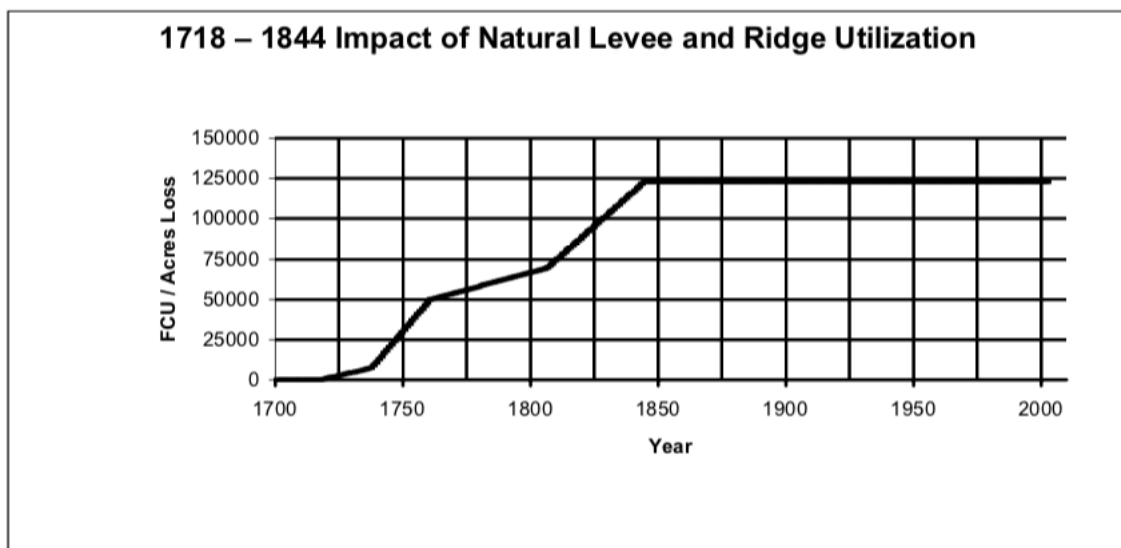**1718 – 1844 Impact of Natural Levee and Ridge Utilization**

Figure 3.1. This graph shows the impact of levee construction and settlement over time in acres lost. Though the direct loss of this specific wetland space seems to culminate in 1850, the loss is only in reference to total habitat destruction. In other words, this graph only represents damage done directly through natural levee and ridge utilization that is impossible to recover. [John Lopez, "Chronology and Analysis of Environmental Impacts within the Pontchartrain Basin of the Mississippi Delta Plain: 1718-2002," 98.]

Year	Without levees	With Levees	Cumulative	net loss rate
	all areas are	sq. miles (km^2)		
1812	543 (1,406)	543 (1,406)	0	0
1895	611 (1,582)	570 (1,476)	41 (106)	0.5 (1.3)/year
1932	641 (1,660)	563 (1,458)	78 (202)	1.0(2.59)/year
2002	684 (1,771)	543 (1,406)	141 (363)	0.9(2.33)/year

Figure 3.2. *Marshland Growth as a Relative Function of Levee/Ridge Utilization.* This table compares potential wetland growth without levee building to the reality of the Pontchartrain Basin. [John Lopez, "Chronology and Analysis of Environmental Impacts within the Pontchartrain Basin of the Mississippi Delta Plain: 1718-2002," 116.]

The depletion of wetlands along the Gulf Coast was not a result of a single event, but it *was* a result of a single motivation: to optimize the New Orleans coast and the Mississippi River for trading opportunities. Riverine and coastal flooding were perceived as a threat to the colonists' vision for settlement and introduction to the European capitalist market. Douglas Brinkley writes about the French-Canadian nobleman Sieur de Bienville, the founder of the city of New Orleans:

> [Bienville] believed that the Mississippi River was in crying need of an ocean port. Having explored the delta region for almost twenty years, he had an intimate understanding of its alternating swamps and bayous (naturally occurring canals). […]
> The Native Americans assured him that it was the driest spot in proximity to both the river and the lake. Bienville was easily convinced that this location— 'on the most beautiful crescent of the river'—would grow into the commercial vortex of the Mississippi Valley. In his view, the site was a great natural port, allowing access to the river, which lay along the southern edge, as well as Lake Pontchartrain …[73]

Not only was Bienville aware of the region's close proximity to sea level, but he personally experienced the potentially devastating effects of flooding from the Mississippi River. This is where Lopez's analysis becomes especially beneficial. In the summer of 1719, the Mississippi River flooded, putting the new city of New Orleans "under nearly a foot of water."[74] Bienville wrote back to the French consul in regard to the flood:

> "I myself went to the spot to choose the best site…All the ground for the site, except the borders which are drowned by floods, is very good and everything will grow there."[75]

He ordered the construction of the first earthen berms—a precursor to the modern levee— to begin soon after. What Bienville failed to realize, however, is that constructing these berms actively interrupted riverine/estuarine systems of sediment deposit and mineral acquisition.

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[73] Douglas Brinkley, *The Great Deluge*, 6.
[74] Douglas Brinkley, *The Great Deluge*, 6.
[75] *Ibid.*, 6.

These two systems are crucial in maintaining soil infiltration capacity, and soil infiltration

capacity dictates whether an inundation of water will result in flooding or will simply be

absorbed by the soil.

Bienville's wording is important context: he notes the potential danger of the site, but

more important than the perceived risk is that the region had seemingly fertile soil. Whatever

perceived risk that Bienville associated with flooding was not as important as the wealth that

would come from creating an agricultural trade network at the mouth of the Mississippi River.

Lopez's work shows that Bienville's decision to build the first levees began a century and

a half of irreversible wetland damage in the bayous of Louisiana. The conclusion will address the

specific mechanisms through which marshland areas soften the blow of coastal storms, but it is

crucial to understand that the wetlands (in full constitution) should be considered as a sort of

ecological resilience for residents of the Gulf Coast.

In understanding a region's risk to natural disasters, vulnerability should be assessed in

conversation with how a community is able to be resilient. In "A Place-Based Model for

Understanding Community Resilience to Natural Disasters" by Susan Cutter et al., vulnerability

is defined as "the pre-event, inherent characteristics or qualities of social systems that create the

potential for harm."[76] Resilience, on the other hand, is defined as "a system's capacity to absorb

disturbance and re-organize into a fully functioning system" which "includes [the system's]

capacity to return to the state (or multiple states) that existed before the disturbance, but also to

advance the state through learning and adaptation."[77] The ecological destruction of wetland areas

along the coast increased the vulnerability of the Gulf Coast region. That is to say that regardless

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[76] Susan L. Cutter, et al., "A place-based model for understanding community resilience to natural disasters," in *Global Environmental Change* no. 18 (2008): 598-606, 599.
[77] Susan L. Cutter, et al., "A place-based model for understanding community resilience to natural disasters," 599.

of population identity (including race and class), agricultural landscaping that took place

between the mid 18ᵗʰ century to the early 20ᵗʰ century rendered residents of the region more

susceptible to damage from hurricanes and flooding.

At the same time that this ecological damage was taking place, industrial and commercial

infrastructures were created. These infrastructures, namely the slave-based agro-economy that

financially supported southeastern states like Alabama, Mississippi, and Louisiana, played a

crucial role in determining the present-day community's ability to be resilient to natural disasters

in spite of any environmental vulnerabilities.

African slaves were first introduced to the region in the early 18ᵗʰ century by the French.

Between 1700 and 1875, over 11,000 enslaved Africans were brought directly to the Gulf Coast

from other American slave ports or from the continent of Africa.[78] Thousands more were traded

throughout the southeastern colonies—an estimated 1,203,437 enslaved Africans were counted

in Mississippi, Alabama, and Louisiana in the 1860 Census.[79] Over this 175 year period, the

three states used this free labor as a means of human capital to build economies that were

increasingly dependent on agricultural output. This agriculture would not have been possible *or

as profitable* without the readily available, free labor that came from the slave trade.

For the purpose of this research, I will first consider 1860, which I have chosen as the

peak of the United States' slave-based economy, and then the period after the Civil War in 1865

to the passing of the New Deal in 1935. The period post-New Deal will be discussed in the

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[78] ["Trans-Atlantic Slave Trade Database," https://www.slavevoyages.org/voyage/database#maps, accessed September 15, 2020.] Variables were changed to only highlight voyages with primary, secondary, or tertiary landings in the Gulf Coast. A vast majority of those enslaved in the three states of study were bought and sold within the North American continent; thus, there is a discrepancy between recorded enslaved individuals in the three states (according to the 1860 census) and those recorded by slavevoyages.org.

[79] United States Census Bureau, *Classified Population of the States and Territories, by County on the First Day of June 1860*, Washington: United States General Land Office, 1860, https://www.census.gov/history/www/through_the_decades/overview/1860.html (accessed May 1, 2020).

following chapter, alongside an examination of how racialized legislature manifests in communities of color. The 1860 Agricultural Census reported that the three states possessed 11% of the nation's farmable land—much of which was used for commercial crops as opposed to subsistence farming.[80] Together, Alabama, Mississippi, and Louisiana accounted for 55% of the nation's ginned cotton and 96% of the nation's sugar crop in 1860.[81] The monocropping of cotton and sugar is notable because of how quickly monocropping depletes soil quality (and thus decreases water holding capacity) and because these crops accounted for a vast majority of the states' revenue.[82]

After emancipation, the formerly enslaved remained, of course, but the plantations did not. This left a large labor force looking for a living wage. Common retellings of the period explain that formerly enslaved blacks were promised "40 acres and a mule" after their emancipation—theoretically enough to provide them a means of subsistence agriculture and some space for producing cash crops.[83] However, this order, which came from Union General William Sherman in January of 1865, actually suggested the following:

> The islands from Charleston, south, the abandoned rice fields along the rivers for thirty miles back from the sea, and the country bordering the St. Johns river, Florida, are reserved and set apart for the settlement of the negroes [sic] now made free by the acts of war and the proclamation of the President of the United States.

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[80] United States Census Bureau, *Agriculture: Year Ending on June 1, 1860*, Washington: United States General Land Office, 1860, https://www.census.gov/history/www/through_the_decades/overview/1860.html (accessed May 1, 2020).

[81] U.S. Census Bureau, *Agriculture: Year Ending on June 1, 1860*.

[82] [United States Department of Agriculture, *Effects on Soil Water Holding Capacity and Soil Water Retention Resulting from Soil Health Management Practices Implementation,* Christopher Smith. Online publication: USDA, 2018. PDF, https://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=nrcseprd1392812&ext=pdf (accessed December 5, 2020).] Though it temporarily increased revenue, monocropping did more harm than good, especially in times of flooding and storm surges.

[83] Gates, Henry Louis, "The Truth Behind 40 Acres and a Mule," The Root via pbs.org (2014), https://www.pbs.org/wnet/african-americans-many-rivers-to-cross/history/the-truth-behind-40-acres-and-a-mule/ (accessed September 15, 2020).

[…] On the islands, and in the settlements hereafter to be established, no white person whatever, unless military officers and soldiers detailed for duty, will be permitted to reside; and the sole and exclusive management of affairs will be left to the freed people themselves … By the laws of war, and orders of the President of the United States, the negro [sic] is free and must be dealt with as such.[84]

General Sherman wanted to allocate 400,000 acres of U.S. land for recently emancipated Africans and African Americans; furthermore, he stated that no man should have *more than* 40 acres of tillable land. Given that there were an estimated 1,203,437 enslaved individuals on plantations in Alabama, Mississippi, and Louisiana alone, it would have been physically impossible for each family to get 40 acres of land. Some blacks were able to take advantage of this—40,000 freedmen settled on the so-called "Sherman land" during 1865, but by the fall of the same year, Andrew Johnson had overturned the law, which significantly limited the financial and employment capabilities of American blacks.

There were two distinct paths for the formerly enslaved to take: first, they could migrate North or West, where urban industrial complexes were beginning to grow and labor was desperately needed; second, they could stay in the South and become a part of the newly established wage-earning (agricultural) laboring class. Many chose the former: between 1915 and 1970, some 6 million blacks moved out of the South. [85] Those who decided to stay, however, found themselves predominantly working on the same plantations that they had recently been freed from. The transition from a slave-based South to one of wage-earning farmers was not easy. There were thousands of acres of plantation land rendered unusable without free labor, and

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[84] Henry Louis Gates, "The Truth Behind 40 Acres and a Mule," The Root via pbs.org (2014), https://www.pbs.org/wnet/african-americans-many-rivers-to-cross/history/the-truth-behind-40-acres-and-a-mule/ (accessed September 15, 2020).

[85] Isabel Wilkerson, "Great Migration: The African-American Exodus North," interview by Terry Gross, *National Public Radio*, September 10, 2010, https://www.npr.org/templates/story/story.php?storyId=129827444 (accessed September 16, 2020).

there were hundreds of thousands of newly homeless African Americans. To make this shift

possible, the newly established Freedman's Bureau focused on easing the transition from free

slave labor to waged agricultural labor.[86]

To do this, they encouraged wage-work for farm laborers and a separation between living

quarters and areas of labor. This quickly turned into what we now recognize as tenant

farming/sharecropping. Former plantations were divided into sections, and each black tenant was

in charge of the land outside of his living quarters. Instead of earning a cash wage, tenants

largely ended up working to pay for their rent—after all, white plantation owners still technically

owned the land that was divided for black tenants. With the addition of Jim Crow in the 1890s,

white landowners were able to extract more labor for less compensation; additionally, because

Jim Crow laws allowed for employment discrimination, non-agricultural job opportunities for

people of color were scarce.[87]

Not much changed for poor black farmers until the New Deal programs were adapted

between 1933 and 1939. Because the New Deal was intended to be a series of overarching,

federal laws with local implementation, the responsibility of enacting effective New Deal

policies rested on the local government. In the South, of course, where Jim Crow laws were set

in stone, the relief from these policies was only felt by white men.[88] For example, the

Agricultural Adjustment Act (AAA) restricted cotton acreage and guaranteed a minimum price

for cotton in the market; this was intended to allow farmers to focus on subsistence agriculture

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[86] Bruce Reynolds, "Black Farmers in America, 1865-2000: The Pursuit of Independent Farming and the Role of Cooperatives," (The United States Department of Agriculture: 2003), 3.

[87] Bruce Reynolds, "Black Farmers in America, 1865-2000," 4.

[88] It is also important to note that the New Deal would not have been successful without the support of southern members of Congress; thus, the New Deal law-making process inherently revolved around the racialized ideals of these men. [Ira Katznelson, *Fear Itself: The New Deal and the Origins of Our Time* (New York: Liverright Publishing Corp., 2013), 21-22.]

and crop diversification.[89] Black farmers rarely had any stake in the selling of their cash crops—typically crops like cotton were taken to market and sold by the white landowner, with profits distributed to tenants later.[90] Because of this precarity (not knowing if crops will be sold, not knowing at what price they will be sold, and not having any guarantee that one is being paid a fair wage for the crops sold), black farmers tended to over-produce cotton on their farms. The AAA, though it helped white farmers who were able to see their crop from beginning to end, did nothing for black tenant farmers other than limit their economic mobility.[91]

In all, environmental degradation under the guise of imperialism and economic gain has significantly altered the Gulf Coast's ability to be naturally resilient to severe weather events. Without a place to go (e.g., marshlands or wetlands that barrier the coast), water inundates coastal neighborhoods with ease. Coupled with a population that has historically struggled with unemployment and poverty, poor black residents of the Gulf Coast are at a significantly higher risk of having their livelihoods affected by flooding. These people trace their roots back to the same tenant farmers written about in the previous paragraph. This is to say that decades of discrimination—first with over a century of enslavement, second through decades of forced economic immobility from 1865-1933—has effectively prevented blacks from building any long-term, generational wealth.[92]

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[89] Bruce Reynolds, "Black Farmers in America, 1865-2000," 8.

[90] *Ibid.,* 7.

[91] *Ibid.,* 9. Between 1930-5, farm land owned by whites increased by 12%; farm land owned by non-whites decreased by 13%.

[92] Wealth in this sense is not strictly based in income. Sociologically, family wealth refers to the entirety of a family's assets, including liquid and non-liquid assets (for example, real estate). In the case of newly-freed blacks, there were simply no assets to be had until emancipation in 1863 and the end of the Civil War in 1865. After this, it was virtually impossible to survive above the poverty line for three reasons. First, working any low-wage job is rather cyclical—one can never make enough money to leave work in search of another, potentially higher-paying job. Second, low-wage agricultural jobs also allowed tenant farmers to use their land for subsistence farming, which guaranteed food security. Third, any higher-paying job would have likely used Jim Crow laws to discriminate

Residential segregation and commercial zoning of black neighborhoods continued this oppression long after Jim Crow was abolished in 1964. Chapter Three focuses on the post-Jim Crow American South, and how employment opportunities and financial insecurity have shaped the lives of Gulf Coast communities today. I will use James Cobb's *The Selling of the South: the Southern Crusade for Industrial Development, 1936-1990* to navigate the era of federal and state industrial subsidies post-New Deal. The next chapter will also discuss the ways in which rural industrialization of the Gulf Coast directly led to disproportionate gaps in wage-earning in communities of color.

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against blacks, or required educational training that was gatekept by the same laws (this includes Black Code laws, under which one could be arrested for vagrancy while searching for employment).

Then They were Free: The Effects of Employment Discrimination on Long-term Wealth
Retention in the American South, 1933-1945

President Roosevelt's New Deal largely shaped the future of twentieth century white

Americans and Americans of color. In addition to the Agricultural Adjustment Act, two pieces of

New Deal legislature have direct ties to the infrastructural violence faced by black communities

in the South: The National Industrial Recovery Act of 1933 (NIRA) and the National Labor

Relations Act of 1935 (NLRA). Let us recall that Galtung finds evidence of structural violence in

patterns of systemic direct or indirect obstruction of one's autonomy.[93] Because the origin of a

discriminatory and racialized American South is the close association of the black body as a non-

human means of production, it is almost necessary to start with an analysis of Reconstruction Era

labor complexes to trace structural violence throughout the twentieth century. The loss of

plantation revenue coupled with the Great Depression devastated Southern agricultural

economies so much so that they turned to rather post-colonial tactics to encourage private

industrial investment. A discussion of these tactics will reveal that the rights of manual and

agricultural laboring whites and blacks were subverted by employers, and this subversion was

permissible by federal New Deal policies and enforced by Jim Crow laws and Black Codes on

local levels. As Ira Katznelson writes in *Fear Itself,* the New Deal was only possible with the

support of the Jim Crow South, and in many ways, loopholes in New Deal legislature allowed for

discriminatory practices to become commonplace in rural, southern industrial spaces.[94]

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[93] [Johan Galtung. "Violence, Peace, and Peace Research." *Journal of Peace Research,* vol. 6, no. 3 (1969), 168. Accessed March 14, 2020. http://www.jstor.org/stable/422690.] In this thesis, autonomy is almost synonymous with self-efficacy or perceived self-agency.

[94] Ira Katznelson, *Fear Itself: The New Deal and the Origins of Our Time* (New York: Liverright Publishing Corp., 2013), 22.

The foremost goal of the New Deal was to provide jobs for the unemployed in order to stimulate the economy—at the peak of the Great Depression in 1933, unemployment reached 25 percent.[95] Southern states desperate to emerge from economic depression took three actions to attract the investment of new industries. First, they lowered wages: according to historian James Cobb, the average southern wage was 74 percent of the northeastern standard in 1932 (there was a slight, but notable, increase of 11 percent between 1932 and 1946) and the incomes of southern laborers were on average 20 to 25 percent lower than the national average between 1947 and 1954.[96]

Second, the local regulation of worker rights was almost nonexistent in the South, despite New Deal legislature—specifically, unionization and striking were *strongly* discouraged by local officials. The passing of the NIRA in 1933 instated federal regulation of wages (which gave way to our current system of minimum wage) and of worker hours. This, in conjunction with the 1935 passing of the NLRA and the economic growth associated with World War II, can be used to explain the 11 percent increase in Southern wages between 1932 and 1946. The NIRA also guaranteed to employees the right to unionize in subsection 7 (a):

> [Employees] shall be free from the interference, restraint, or coercion of employers of labor […] in the designation of such representatives or in self-organization or in other

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[95] [Robert E. Lucas and Leonard Rapping, "Unemployment in the Great Depression: Is There a Full Explanation?" Journal of Political Economy, vol. 80, no. 1 (1972), Table 1.] High speculation by private investors (without any sort of federal backing of the banking system, including loans or credits) throughout the 1920s coupled with low international trade and a lower demand for specialized manufacturing led to the 1929 market crash. Farmers responded to World War I by expanding farms to match overseas demand for agricultural products; after the war ended in 1918, they continued to produce the same amount, but the United States government could not guarantee prices. The 1929 market crash impacted farmers so severely because of the wartime speculation that took place ten years prior; in Mississippi, Alabama, and Louisiana, which possessed roughly 11% of the nation's farmable land, poverty was felt to an extreme [U.S. Census Bureau, *Agriculture: Year Ending on June 1, 1860*, Washington: United States General Land Office, 1860, https://www.census.gov/history/www/through_the_decades/overview/1860.html, (accessed May 1, 2020)]. The New Deal follows the Keynesian argument that economic depressions can be mediated by increased government intervention (in the form of jobs) to directly increase a country's aggregate demand.

[96] James Cobb, *The Selling of the South: The Southern Crusade for Industrial Development, 1936-1990, 2nd ed.* (University of Illinois: 1993), 114.

concerted activities for the purpose of collective bargaining or other mutual aid or protection.[97]

Furthermore,

No employee and no one seeking employment shall be required as a condition of employment to join any organization or to refrain from joining a labor organization of his own choosing.[98]

This was intended to allow collective bargaining without reliance on independent unions. Instead of increasing the freedoms of workers, however, this only created more complications for southern laborers—without independent unions, employers were in total control over the new company unions.

Low wages remained in the South because states advertised business opportunities to investors as extremely low cost by lowering (and sometimes eliminating) property rent and through tax exemption. This way, an investing firm is essentially only responsible for financing the employee wages.[99] The lower the wages, the lower the price of investment, and the more an employer can profit.

Because of the direct effect of low wages on increased industrial appeal,[100] southern governmental officials and employers adamantly resisted any actions that threatened this relationship. The passing of the National Labor Relations Act in 1935—which was supposed to further enable workers to join labor organizations while protecting their employment status—

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[97] David McCabe, "The American Federation of Labor and the NIRA," The Annals of the American Academy of Political and Social Science, vol. 179 (1935), 146.

[98] David McCabe, "The American Federation of Labor and the NIRA," 146

[99] James Cobb, *The Selling of the South*, 39.

[100] James Cobb, *The Selling of the South,* 97-98, 110. Between 1939 and 1954, manufacturing establishments in the South had increased by 80 percent, and between 1940 and 1960, average per capita personal income had increased by 358 percent. Union growth was seemingly high—between 1939 and 1953, union membership increased by 185 percent; however, *net union membership* remained almost exactly the same during those years. This stagnation can be explained through three actions by employers: first, many plants would sooner close than employ union workers; second, a wide unemployment pool ensured that an employer could always find more work, which enabled them to fire any union workers, and third, managers could easily blacklist any worker affiliated with a union. This statistical information affirms Cobb's claim that employees were fired for attempting to use collective bargaining tactics, or their company unions were seen as illegitimate (and thus disbanded) by managerial staff.

was seen in the South as an "assault on state sovereignty."[101] Over the next decade, state desires for lassiez-faire industrialization mixed with anti-immigration (white supremacist) and anti-Communist sentiment to turn unionization into a sociopolitical issue.[102]

By the signing of the Taft-Hartley Act in 1947, antiunion belief systems were commonplace in local southern governments, and the new right-to-work laws were welcomed by southerners. In short, the Taft-Hartley Act made it illegal to force workers to pay union dues, and made it illegal for employers to discriminate based on union status. In theory, this would allow workers to maximize pay and still benefit from union representation. In southern practice, where there was a racial stigma associated with unionization, right to work laws allowed employers to drive up production without having to mediate worker conditions under the guise of peaceful, "friendly cooperation" between employees and employers (Figure 7.0).

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[101] *Ibid.,* 100.
[102] *Ibid.,* 108.

The last way in which southern employers failed to regulate laborer rights was through their misuse of federal subsidies to build local industrial infrastructure. The New Deal granted states many avenues through which they could request federal funding—for example, the AAA provided farmers with funds to allow them to let some of their farmland lay fallow in order to improve soil quality while minimizing agricultural overproduction.[103] The Works Progress Administration (WPA) and the Civil Works Administration (CWA) allowed for states to request subsidies for the creation of infrastructure intended to enhance general welfare—this included anything from schools to the construction of roadways. On more than one occasion, there is evidence of states applying for WPA funding and misappropriating it to attract industries. In Ellisville, Mississippi, for example, $26,092 was awarded by the WPA

Figure 4.0. *Informative Pamphlet from the Mississippi Industrial Commission.* An example of subtle anti-union propaganda. [Mississippi Advertising Commission, *Mississippi: a Great State Going to Town Industrially,* August 1937, scanned PDF of original, printed in *Time* Magazine, from the Mississippi Department of Archives and History, accessed December 6, 2020, http://www.mshistorynow.mdah.ms.gov/images/420.jpg.]

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[103] Bruce Reynolds, "Black Farmers in America, 1865-2000: The Pursuit of Independent Farming and the Role of Cooperatives," (The United States Department of Agriculture: 2003), 8.

in 1935 for the construction of a vocational school. Instead of a school, a factory was built, and

the Vertex Hosiery Company was able to open in Ellisville as a rent-free, tax-exempt

"educational institution."[104]

Not only was this an illegal misuse of government money, but Vertex Hosiery primarily

employed underage teenagers. The Fair Labor Standards Act, which prohibits the hiring of

people younger than 16, was not passed until 1938, but because of Vertex's low wages and

almost entirely teenaged laboring group, it was quickly shut down to avoid charges from the

WPA.

The third and final way in which southern states appealed to private industries was

through the subjugation of black labor. James Cobb writes in *The Selling of the South* that

although state-administered development programs were theoretically designed to serve all

members of the state,

> New South crusaders of the late nineteenth century and urban boosters of the
> early twentieth promised investors an inexhaustible supply of "100 percent Anglo Saxon"
> workers…
> When state promotional messages referred to a surplus of Anglo-Saxon labor, the
> assumption was clear that unemployment or underemployment of blacks was a natural
> condition and required no remedy.[105]

Thus, blacks became the scapegoat for resentment over the loss of southern economic power

post-Civil War. The same advertisements that chastised unions, promised tax exemption, and

undertook the costs of building industrial parks also made it clear that these employment

opportunities were being advertised to the white population (Figure 7.1). Furthermore, ads like

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[104] Bruce Reynolds, "Black Farmers in America, 1865-2000: The Pursuit of Independent Farming and the Role of Cooperatives," 7-9.
[105] *Ibid.*, 96.

the one shown in Figure 4.1 present workplace discrimination as a positive indicator of quality work.

Figure 4.1. *Advertisement from the Mississippi Industrial Commission.* The third paragraph reads, "The underemployed resources of the state, the wealth of raw materials, the high percentage of friendly, native Anglo-Saxon labor […] Mississippi offers you all of these basic factors to help you lower your manufacturing costs." [Mississippi Advertising Commission, *A Great State Offers Planned Cooperation to Industry,* May 1937, in *Fortune* magazine, Mississippi Department of Archives and History, accessed December 6, http://www.mshistorynow.mdah.ms.gov/images/418.jpg.]

The outlawing of chattel slavery did not deter former plantation owners or local market leaders from wanting to maintain a social hierarchy. Since they could no longer legally force blacks to work wage-free, employers and lawmakers did everything possible to limit job opportunities to poor-paying physical or domestic labor. What emerged was a sort of caste system—one that relied on discriminatory customs and legislation like Jim Crow and the Black Codes to maintain consistent unemployment in black communities. This unemployment supplied

a surplus of workers for both independent and commercial employers looking for workers to fill

undesirable, low-wage, domestic and agricultural positions.[106]

Employment discrimination in the New Deal Era relied heavily on notions strongly

reminiscent of the Antebellum South. In 1921, the Division of Negro Economics of the United

States Department of Labor referred to increasing numbers of employment as "results [made]

possible through the new consciousness of the negro wage earner as to his worth as a producing

agent and as to his having a higher regard for his employer."[107] Plessy v. Ferguson in 1896

opened the door for legal discrimination inside the workplace by ruling that segregation of public

and private spaces neither violates the thirteenth amendment (which abolished slavery) nor

infringes on the freedoms guaranteed by citizenship.[108]

Plessy v. Ferguson allowed each state to design unique limitations on black communities,

but Jim Crow was also largely influenced by Black Code legislation which had been passed in

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[106] Bruce Reynolds, "Black Farmers in America, 1865-2000: The Pursuit of Independent Farming and the Role of Cooperatives," 115. Although industry was on the rise in the South in the 30's, these industries had a large environmental effect because the cheapest and thus most attractive industries relied on the use of raw or domestically cultivated resources like lumber, cotton, sugar, and oil. This bares striking resemblance to infamous post-colonies like Brazil, whose leaders dismantled workers' rights and lowered environmental protections to appeal to Western industrializers. Even though Mississippi, Louisiana, and Alabama were incorporated within the empire (so to speak) before the Civil War, the loss of slave infrastructure shocked Southern economies almost as much as it would have affected the economy of a small country. In both cases, attempts to enter the Western capitalist market used rather neoliberal efforts to appeal in the marketplace at the expense of the working classes and the formerly enslaved.

[107] George Haynes, "The Negro at Work During the World War and During Reconstruction: Statistics, Problems, and Policies Relating to the Greater Inclusion of Negro Wage Earners in American Industry and Agriculture," (Washington: US Department of Labor, Division of Negro Economics, 1921), 83. Accessed September 29, 2020, https://fraser.stlouisfed.org/title/negro-work-world-war-reconstruction-5185.
The context of this is notable; unemployment levels in the southern states (specifically Mississippi) were explained by the migration of blacks out of the South after the Civil War. The US Department of Labor recognizes that a large portion of Mississippi's revenue was based in agriculture, and that this department suffered from low demand (which we can now definitively link to the sudden stagnation in international trade after WWII). Instead of providing an explanation for the lack of industrial interest in the South, the author insinuates that low state revenue was only a result of black migration and a shrinking agricultural labor class. This perspective still views the black American as a means of production, rather than as a "friendly native laborer" like their white counterparts were advertised in Figure 7.1.
[108] Plessy v. Ferguson, 163 U.S. 537, (Criminal District Court for the Parish of New Orleans, 1896).

the wake of the Civil War in many states. Largely, the Black Codes served as a means of preserving the Antebellum racial hierarchy. They subverted federal freedoms guaranteed by the constitution—for example, the third amendment, the right to bear arms, was undercut by the Mississippi Black Codes, which stipulated that "no freedman, freed negro, or mulatto… shall keep or carry firearms."[109]

In the context of employment discrimination, the Black Codes significantly limited the opportunities of blacks even before the New Deal, and set the stage for disproportionate mitigation of NIRA and NLRA policies in the South. The laws that can most closely be linked to the aforementioned treatment of blacks in industrial spaces are the various vagrancy laws that criminalized unemployment.

In Mississippi, the vagrancy law stated that any freedman, "free negro or mulatto" without "lawful employment" found assembling was subject to imprisonment. Louisiana laws were similar, if not more extreme. Formerly enslaved black people were only allowed to work under the employment of whites:

> Every negro is required to be in the regular service of some white person, or former owner, who shall be held responsible for the conduct of said negro. But said employer or former owner may permit said negro to hire his own time by special permission in writing…[110]

Alabama did not have any blatant Black Codes, but they still had similar vagrancy laws intended to force black employment in particular sectors. Vagrants in Alabama were considered to be "any runaway, stubborn servant or child [or] a laborer or servant who loiters away his time, or

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[109] *Laws of the State of Mississippi: Passed at a Called Session of the Mississippi Legislature, held in Jackson, 1865*, Jackson: J.J. Shannon & Co., 1866), subsection IV, scanned PDF of original document (accessed September 28, 2020).

[110] United States War Department, Bureau of Refugees, Freedmen, and Abandoned Lands. Laws in Relation to Freedmen, Senate Executive Doc. No. 6. (Washington: U.S. Government Printing Office, 1866), scanned PDF of original document.

refuses to comply with any contract for a term or service without a just cause" and were subject to imprisonment or fines.[111]

In effect, these laws worked to support the caste system about which Cobb writes. Black southerners had fewer job opportunities because of segregated workplaces, and the job market was further minimized by segregated educational spaces that refused to allow blacks to train for skilled employment. Unemployed black people could be arrested for their unemployment status, which forced them to take jobs regardless of desire, wage, or union membership. When employed, job security for blacks was rare—a 1955 study of industrial labor in Mississippi revealed that, although they were less absent and less likely to quit than whites, black employees were less likely to advance to a higher paygrade and just as likely to be laid off.[112] In all, the outlook for black Americans in the South was bleak: aside from making a lower income than their white or northeastern equivalents, they faced difficulty finding work in the first place. When they did, jobs had no legal guarantees of union-based benefits or Social Security benefits,[113] and most importantly, had *no security*.

Without job security, black Americans were unable to build any sort of long-lasting familial (and thus intergenerational) wealth in the early twentieth century. This can be seen through an examination of family incomes from 1930 to the present: in 1939, white men had on average an income of $1,112 while men of color made an average of $492 in the same year.[114] Ten years later, this disparity had decreased only slightly from 54% to a 50% wage gap between

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[111] Martin, David, "The Birth of Jim Crow in Alabama 1865-1896," National Black Law Journal vol. 13, no. 1 (1993), 186, accessed on September 29, 2020, https://escholarship.org/uc/item/5x65v6ch.

[112] James Cobb, *The Selling of the South*, 117.

[113] *Ibid.,* 115.

[114] U.S. Census Bureau, "Current Population Reports: Consumer Income," United States Department of Commerce and the Bureau of the Census, (Washington: 1970), 84. Accessed on September 30, 2020, https://www2.census.gov/prod2/popscan/p60-069.pdf.

black workers and white workers (Figure 8.0).[115] In 1968, four years after the passing of the

Civil Rights Act, black households were still making on average 66 percent of the income white

households were making. In 2017, the average white family income was $68,145 while the

average black family income was $40,258—a difference of 40 percent.[116] Even in 2017, the

average black family was making 59 percent of the average white family's income while still be

faced with the same day-to-day expenses.

Table A-7.--COLOR--MEDIAN WAGE OR SALARY INCOME IN 1939 AND 1947 TO 1968 OF PERSONS 14 YEARS OLD AND OVER, BY SEX, FOR THE UNITED STATES

Year	Male		Female	
	White	Negro and other races	White	Negro and other races
1939[1]......................	$1,112	$460	$676	$246
1947......................	2,357	1,279	1,269	432
1948......................	2,711	1,615	1,615	701
1949......................	2,735	1,367	1,615	654
1950......................	2,982	1,828	1,698	626
1951......................	3,345	2,060	1,855	781
1952......................	3,507	2,038	1,976	814
1953......................	3,760	2,233	2,049	994
1954......................	3,754	2,131	2,046	914
1955......................	3,986	2,342	2,065	894
1956......................	4,260	2,396	2,179	970
1957......................	4,396	2,436	2,240	1,019
1958......................	4,569	2,652	2,364	1,055
1959......................	4,902	2,844	2,422	1,289
1960......................	5,137	3,075	2,537	1,276
1961......................	5,287	3,015	2,538	1,302
1962......................	5,462	3,023	2,630	1,396
1963......................	5,663	3,217	2,723	1,448
1964......................	5,853	3,426	2,841	1,652
1965......................	6,188	3,563	2,994	1,722
1966......................	6,510	3,864	3,079	1,981
1967......................	6,833	4,369	3,254	2,288
1968......................	7,291	4,839	3,465	2,497

[1]Excludes public emergency workers but includes members of the Armed Forces.

Figure 4.2. *Median Wage or Salary Income, by Race and Sex, 1939, 1947-1968.* [United States Census Bureau, *Current Population Reports: Consumer Income,* George Brown, series P-60, report no. 69, Washington: U.S. Government Printing Office, 1970, scanned PDF of original, https://www2.census.gov/prod2/popscan/p60-069.pdf, (accessed December 6, 2020).]

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[115] U.S. Census Bureau, "Current Population Reports: Consumer Income," 84.
[116] "Real Median Household Income by Race and Hispanic Origin: 1967-2017," United States Census Bureau, 2018, Figure 1. Accessed September 30, 2020, https://www.census.gov/content/dam/Census/library/visualizations/2018/demo/p60-263/figure1.pdf.

Over the course of the twentieth century, job obstruction and corresponding high levels of unemployment limited the economic opportunities of southern black communities. This unemployment and lack of financial stability would not have occurred had the industrial age in the South not relied on fundamentally racist legislation. But how does this history of labor inequality help us understand the effects of Hurricane Katrina in communities of color on the Gulf Coast? In conversations of resilience, the ability of a community to respond to a hazard efficiently relies entirely on self-efficacy, social capital, and a community's adaptive capacity.[117] Even though employment is not the only basis of wealth, it provides a clear history of infrastructural violence perpetuated against blacks in the twentieth century.[118]

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[117] Susan L. Cutter, et al., "A place-based model for understanding community resilience to natural disasters," Global Environmental Change vol. 18, no. 4 (2008), 600;
Daniel Aldrich and Michelle Meyer, "Social Capital and Community Resilience," American Behavioral Scientist vol. 59 no. 2, "Definition and Theories of Social Capital," accessed September 30, 2020, https://doi.org/10.1177/0002764214550299.

Social capital generally refers to "the features of social organizations, such as networks, norms and trust that facilitate action and cooperation for mutual benefit." Self-efficacy should be considered in the financial context, especially since it follows a discussion of forced, systemic unemployment in a certain community. Understanding how southern blacks viewed their financial security and potential is necessary before analyzing their decisions made in a time of crisis. Adaptive capacity is defined, more or less, as the existence of local infrastructure that allows a community to absorb the effects of a hazard or crisis while minimizing the effect felt by community members.

[118] This chapter primarily concerns the rise of racialized employment opportunities in the South because it proves to be the linchpin between housing segregation, disproportionate access to educational opportunities, and political redlining. Employment dictates both financial mobility and security, both of which are determinants in the ability of one to operate as consumers. The New Deal legislation that forced black workers into low-wage agricultural and industrial jobs effectively immobilized them as autonomous consumers.

In their book *From the Ground up: Environmental Racism and the Rise of the Environmental Justice Movement,* environmental lawyers Luke Cole and Sheila Foster argue that environmental injustices often plague poor communities of color in a three-step process. First, industrial urban areas attract those unemployed or struggling to find a steady job (and we know from this chapter that these people are usually black). Second, once the industry has left the area, leaving it *post-industrial*, residents are unemployed and unable to migrate to suburban areas for an onslaught of reasons—homeownership is usually impossible without a loan, and as of 2019, black applicants were denied 80 percent more than their white counterparts. [Diana Olick, "A Troubling Tale of a Black Man Trying to Refinance His Mortgage," CNBC News, August 19, 2020, accessed December 1, 2020, https://www.cnbc.com/2020/08/19/lenders-deny-mortgages-for-blacks-at-a-rate-80percent-higher-than-whites.html.] Third, as the post-industrial space deteriorates, especially in the context of a growing suburbia, these residents become trapped. [Luke Cole and Sheila Foster, *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement,* (New York: New York University Press, 2001), 21.]

In conversations of resilience, then, this intergenerational poverty—caused by decades of

workplace discrimination—can be easily tied back to self-efficacy. Perceived Self-Efficacy

(PSE) refers to "individuals' perception of their domain-specific capabilities [which]

fundamentally shapes… internal constraints and thereby drives economic behavior."[119] In the

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This only taps the surface of the connection between housing segregation and the push for industrialization that accompanied the New Deal. Let us return to the disparate rate at which blacks are approved for mortgage loans. Not only was the goal of the New Deal to increase the capital of Americans through employment, but it was to also encourage the building of assets and investments in a (now) federally-backed economy. [Adam Gordon, "The Creation of Homeownership: How New Deal Changes in Banking Regulation Simultaneously Made Homeownership Accessible to White and out of Reach for Blacks," *The Yale Law Journal,* vol. 115, no. 1 (2005), 188.] By setting up a system of lending and long-term repayment through the new Home Owners' Loan Corporation (HOLC), consumers would have to pay less upfront—meaning more Americans could become homeowners than ever before [Adam Gordon, "The Creation of Homeownership," 188.] These loans, of course, were largely federally insured by the Federal Housing Administration (FHA). Federal insurance allowed for cheaper down-payments and monthly payments, even though the houses were typically newer and of a better quality [Adam Gordon, "The Creation of Homeownership," 206.] However, the FHA-insured loans, much like other infrastructures that emerged from the New Deal were strongly racialized.

The HOLC was the first to introduce notions of residential segregation: beginning in the mid 1930s, they rated every American neighborhood on an A-D quality scale— 'A'-rated neighborhoods were homogenous, mostly white, non-immigrant families, while 'D'-rated neighborhoods, colored red on the map (giving us the phrase 'red-lining'), were predominantly black. The HOLC did not use this map in a discriminatory way—in fact, they gave the majority of loans to 'C'- and 'D'-rated neighborhoods—but they certainly set the stage for discrimination from the FHA, and showed the American public that the safest, most desirable neighborhood is occupied by whites only.

The FHA, remember, determined which loans could be federally insured, and they did so by closely following the HOLC's map. The FHA's argument was that A-rated neighborhoods, if subject to a heterogenous population—marked first by the decrease in white protestants, second by the increase of Jews, and finally by the occupancy of African Americans—will economically collapse [Adam Gordon, "The Creation of Homeownership," 206.] So, the FHA routinely denied insurance to those in 'C'- and 'D'-rated neighborhoods. The results of this discrimination are staggering: 91 percent of homes insured by the FHA between 1933 and 1939 were in suburban areas; in 1950, only 2.3 percent of FHA-insure homes were owned by people of color; furthermore, in the same year, FHA-insured homes owned by blacks were on average worth 25 percent less than FHA-insured homes owned by whites. Housing, especially in rural areas, dictates proximity to employment, education, and food security. Stable housing, and specifically homeownership as opposed to renting, is especially necessary for hurricane preparation—the ability for one to make permanent modifications to one's home so that it can withstand high winds and flooding is one example. The proximity to a local grocery store that is well-stocked with water and canned food, both necessary for evacuation, is another.

70 years later, we can see that New Orleans, Louisiana is very much an example of residential segregation in a post-industrial space. Not only are blacks concentrated here more than any other place on the Gulf Coast, next to Mobile, Alabama, but their proximity to three water sources—the Mississippi River, Lake Pontchartrain, and the Gulf of Mexico—almost ensures environmental destruction in the event of a hurricane.

[119] Wuepper, David and Travis Lybbert, "Perceived Self-Efficacy, Poverty, and Economic Development," Annual Review of Resource Economics vol. 9 (May 2017), introduction. Accessed October 1, 2020, https://arefiles.ucdavis.edu/uploads/filer_public/9c/27/9c271371-049f-4e3e-968d-0b429b0a4513/wuepper_and_lybbert_pse_poverty_and_development_arre_2017.pdf.

context of the history of labor and its relation to Hurricane Katrina, self-efficacy can be considered twofold. First, there was the seemingly non-existent possibility of newly-freed blacks emerging from poverty. Informal and institutional racism targeted the black man as an identity-less means of production—this would effectively dismiss any possibility of perceived economic potential. The psychological effects of racial trauma on human decision-making should not be remiss. Second, in the present day, self-efficacy is crucial in the decision to evacuate before a severe storm.[120]

Like PSE, social capital is almost always determined by history—societal customs and social organizations take decades to normalize. While self-efficacy refers to the individual, social capital refers to the individual's relationship to those around them. In times of disaster, social capital is how we recognize non-governmental mitigation within the community.[121] In the states bordering the Gulf of Mexico, social organization is historically hierarchical and racialized. With chattel slavery lasting almost two centuries, followed by another century of lawful discrimination and demonization of African Americans, the social capital necessary to create true resilience is lacking. (However, it should be noted that social capital also exists within communities of similar identity background, which suggests that *within black communities alone*, intergenerational trauma provides a network through which they can create social capital.)

The Gulf Coast's adaptive capacity was lightly touched on in the previous chapter; government officials would likely refer to the extensive system of levees as a sort of adaptive capacity. Since we know that these levees deteriorate the region's natural hurricane defense system—wetlands and marshes—and also notoriously failed coastal communities during

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[120] The next chapter will discuss the importance of this specific decision.
[121] For example, a neighbor helping another evacuate, etc.

Hurricane Katrina, they will not be considered as a method of supporting coastal adaptive capacity.

Without social capital networks that foster trust, sharing, and loyalty within communities despite identity, adaptive capacity is significantly lowered because there is a sort of governmentally-legitimized partition preventing community members from seeing themselves as parts of a whole. Therefore, industrial complexes that historically perpetuated poverty in the South through racialized hiring schemes and overall subjugation of physical laborers, actually *diminished* the entire community's potential for adaptive capacity.

In conclusion, the New Deal, which was intended to enhance welfare for all Americans and give the country the economic boost needed to emerge from the Great Depression, had certain federal implications, but other local applications. Mississippi, Louisiana, and Alabama, the three states whose revenue most relied on the slave-agricultural complex suffered immensely during the Great Depression—in response, they sacrificed the rights of laborers (including their union rights and wages) to lower investment costs. This was relatively successful, and between 1933 and 1935, the number of industrial workers in Mississippi alone had increased at a rate 410 times faster than the number of agricultural workers.[122] While white, Anglo-Saxon laborers enjoyed these new employment opportunities, the former enslaved and their relatives faced even more hardship. Workplace and employer discrimination in industrial parks forced blacks into the extremely low-wage realm of domestic work or physical labor (determined to be too undesirable for blacks). Consistent black unemployment is something seen even today—the 2019 unemployment rate was 5.4 percent in the black community while the national average was 3.6

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[122] Mississippi Advertising Commission, *It's a fact…*, 1935, scanned image in the Mississippi Department of Archives and History online database, accessed December 1, 2020, https://www.mdah.ms.gov/senseofplace/tag/government.

percent in 2019[123]—and traces its roots to employment discrimination allowed by the New Deal, Jim Crow, and the Black Codes. The lack of financial security in present-day African American communities is a direct consequence of this history.

Resilience on an individual level revolves around decision making, and economic stability could quite possibly be the greatest determinant when one is faced with the decision to evacuate in a storm. On a broader level, social networking and stable community relationships are the next most important aspect of resilience to consider, and the South's lawfully racist past has actively deterred black people from being a part of and/or benefiting from projects meant to increase community welfare.

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[123] "Unemployment rate was 3.6 percent in October 2019," United States Bureau of Labor Statistics, Current Population Study (2019), figure 1, accessed September 30, 2020, https://www.bls.gov/opub/ted/2019/unemployment-rate-was-3-point-6-percent-in-october-2019.htm.

"A Home was Worth Fighting For:" The Decision to Stay or Evacuate in 2005

Historiographically, the recognition of systematic oppression has occurred in two distinct ways. The first, which I exemplified in Chapters Two and Three, involves tracing the histories of the oppressive system in question in order to determine how prejudices have evolved alongside law-making and urban development. For example, historian Mike Davis in his book *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* analyzes primary sources like death records, agroeconomic sources, and weather patterns to establish the histories of famines in post-colonies like Brazil, China, and India. Davis uses these sources to show the ways in which populations prepared for El Niño-induced harvest failure and prevented famines from occurring—in other words, pre-colonial community resilience. Davis shows that, after the implementation of imperial governments in these countries, indigenous methods of community resilience were obstructed, causing famines to be experienced more frequently and at a deadlier rate.[124]

Similarly, in the two previous chapters, I analyzed environmental resilience and the evolution of black oppression in industrial complexes (including a footnote on housing in communities of color). The second way in which historians question infrastructural violence is through an analysis of contemporary experiences of the oppressed group. A prime example of this type of work is anthropologist-doctor Paul Farmer's book *Infections and Inequalities: The Modern Plagues. Infections and Inequalities* tackles the issues of systemic inequalities in healthcare structures in countries like Haiti, the United States, and India. (There is no

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[124] Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (London: Verso Books, 2001), 287.

coincidence that both Davis and Farmer's regions of study have colonial histories—exploitative governments are responsible for the development of prejudiced or neglectful infrastructures.)

Unlike Davis, however, Farmer uses primarily ethnographic sources for his work. He argues that medical infrastructures regularly neglect poor people of color to challenge the idea of patient noncompliance,[125] and proposes the seemingly obvious claim that no one *wants* to be sick—instead, poverty "decreases the ability of patients to 'comply' with [prescribed, medical] regimens."[126] By talking to community members sick with Tuberculosis or HIV/AIDS, he can trace the ways in which medical care is inaccessible on an individual level, and is then able to make claims based on phenomenological evidence.

I hope to reflect Farmer's work in this chapter. In lieu of in-person interviews, I am using primary sources like *Voices from the Storm,* a collection of narratives, and video footage of survivor interviews. Using primary sources will allow me to examine the ways in which infrastructural inequalities in the housing market and in employment, through social networking, infiltrated the everyday lives of poor people of color, as well as how these systems were stressed by a severe weather event.

The last chapter concluded with the statement that employment inequalities prevented black people from taking part in the consumer culture that emerged post-WWII—and that the largest indicator of this disparity can be found in the housing market.[127] Even though Title XIII of the 1968 Civil Rights Act outlawed housing discrimination on the basis of race, family status, and nationality, neighborhoods along the Gulf Coast still show remarkable racial inequalities. In Louisiana, where 1,741,076 residents are householders, according to the 2019 American

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[125] Paul Farmer, *Infections and Inequalities: The Modern Plagues* (Berkley: University of California Press, 1999), 14.
[126] Paul Farmer, *Infections and Inequalities*, 14.
[127] See Chapter 3, footnote 117.

Community Survey, approximately 64 percent of those residents are white. 30 percent of

householders in Louisiana are black. In coastal parishes, like Orleans Parish, St John the Baptist

Parish, and Tangiphoa Parish, we find the highest concentration of black residence.[128] According

to my calculations, almost 30 percent of Louisiana's black householders are in the five parishes

that border Lake Pontchartrain and the Gulf of Mexico, and another 15% live in parishes that

border the Mississippi River to the East.

     Because Mississippi does not have a port-based industrial system like New Orleans, a

majority of black residents live in the northern Delta region. Those who live on the coast,

however, are still largely concentrated in urban areas--Gulfport, Biloxi, and Pascagoula show the

highest populations of blacks in the region.[129] In Alabama, they are concentrated in Mobile and

Pensacola. Figure 4.0 shows a map of the area by race: green dots are black residents, blue dots

are white residents, and orange dots are Hispanic residents.

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[128] An estimated 534,700 African Americans were considered householders in 2019 (as opposed to homeownership, householdership encompasses renters and those in public housing). Of those, 85,488 (16%) resided in Orleans Parish, 43,079 (8%) resided in Jefferson Parish, 8,273 (1.5%) resided in St John the Baptist Parish, 12,810 (2.4%) resided in Tangiphoa Parish, and 10,181 (1.9%) resided in St. Tammany Parish. A combined 29.8% of Louisiana blacks live within these 5 parishes, which is approximately 9% of the total householdership in the state. A combined 15% of blacks reside in parishes that border the Mississippi River (East Baton Rouge, Ascension, and St James). This is significant because these communities would have to cross a flooding Mississippi River in order to evacuate West to Houston, Texas. 70,029 black householders (13%) live in East Baton Rouge Parish, a primary evacuation destination for New Orleans refugees. [source]
This information is from maps generated with landgrid.com, a map-making software that allows users to view American Community Survey data using geographic markers.
[129] Dustin Cable, "Racial dot map," created for the Weldon Cooper Center for Public Service, (University of Virginia, 2013), accessed November 29, 2020, http://racialdotmap.demographics.coopercenter.org/.

Figure 4.0. *Racial Dot Map*. Dustin Cable, *Racial Dot* Map, July 2013, online map, generated by the Weldon Cooper Center for Public Service at the University of Virginia, accessed December 6, 2020, https://demographics.coopercenter.org/racial-dot-map.

In Chapter One, road inaccessibility was briefly mentioned—Interstate 10 was rendered unusable on the East side of the Mississippi River by storm surges, but it was also inaccessible to westward traffic. The I-10 Twin Span Bridges, which cross Lake Pontchartrain to connect St. Tammany Parish and Orleans Parish, suffered multiple structural failures as a result of flooding.[130] Many who tried to evacuate never made it to their planned destination—instead, they overwhelmed hotels, ended up in the Superdome, or had to return home.

These statistics help us understand, theoretically, some of the circumstances that might hinder one's evacuation process, or even their decision to evacuate in the first place. The decision to evacuate is multifaceted: employment, housing status, and social networking all play different roles in making such a choice. Some may decide not to evacuate *for* their jobs, or in

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[130] Genda Chen et al, "Analysis of the Interstate 10 Twin Bridge Collapse" in *Science and the Storms: the USGS Response to the Hurricanes of 2005,* USGS Circular 1306, Washington: U.S. Department of the Interior, 2007, https://pubs.usgs.gov/circ/1306/pdf/c1306_ch3_d.pdf, accessed December 1, 2020, 30.

order to *protect* their jobs or employment status. Likewise, some may decide to ride out a storm

in order to better physically protect their homes, boats, or other assets. Social networking, with

the financial stability that accompanies employment, answers the question, "*If I evacuate, where*

can I go?"

Social networks, or community networks, are critical to community resilience for this

very reason: a healthy community network informs and protects its own community members. In

a hurricane scenario, this involves protecting information sources, facilitating evacuation, and, as

a last resort, providing shelter and food to those who could not evacuate. Locally, social

networks take a multitude of forms, as they are largely contingent on resources available to the

community in question. The following three instances provide lived examples of social

networking during and after Hurricane Katrina reached the Gulf Coast.

New Orleans' local news station, WDSU, provided extensive live coverage of Hurricane

Katrina before, during, and after the storm's initial landfall. According to Anzio Williams, the

WDSU news director, his coworkers were fearful of the storm, but felt compelled to provide

their viewers with potential life-saving coverage:

> I could kinda (*sic*) see in certain people's eyes that they were scared, so after we
> went through the initial call for anyone who wanted to leave, then I said, "Who all wants
> to stay and cover this?" And then, you know, folks started raising their hand. [...]And by
> the end, everybody in the room had raised their hand.[131]

Eventually, as the storm made landfall in New Orleans, the news director had no choice but to

consider an evacuation for his team. Even though this is an example of an organization of people

rather than an individual, William's plan still had to consider the question of where to send his

staff members. Soon, a plan was devised to evacuate WDSU anchors by car to a sister news

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[131] "WDSU's Hurricane Katrina Coverage," YouTube video, 10:03, posted by "WDSU News," October 31, 2007, https://www.youtube.com/watch?v=sP0EJzsCymA.

station, WAPT, in Jackson, Mississippi. Road closures and six-lane traffic headed North turned a three-hour drive into an eight-hour drive, and WDSU was unable to continue coverage without its anchors, who had not reached their destination.[132] Another sister station in Atlanta, 500 miles away, picked up the coverage until the WDSU reporters were able to safely arrive in Jackson.[133]

The workings of these three stations in tandem is evidence of social networking at its best. WDSU anchors opted into a risky, life-threating situation in order to provide potentially life-saving information to the public: they detailed evacuation routes, transportation opportunities, and last-resort home preparation tactics.[134] Not only was the content of the information crucial, but they were broadcasting to an audience who, for whatever reason, had not already evacuated—a group at a significantly greater risk than the general population.

Elsewhere in New Orleans, Father Vien The Nguyen, the pastor at the Mary Queen of Vietnam Church in New Orleans East, decided against evacuating so he could open his church doors to those in need of shelter.

> At 9:30 Mass [on August 28, 2005], I told the people that the Hurricane had reached Category 5—175 miles an hour. And the reporters were saying with that force, residential buildings would just collapse. So I told the people, "All of you are to leave, but those of you who cannot leave, I will open up the school building," because that's a newer structure, and also it has a second floor just in case of flooding, and then they could evacuate upstairs. […]
> So I told them, "I will open it up at 3 p.m., but get out if you can."[135]

Over a hundred evacuees arrived that day, bringing their own food and water with them. Soon after the eye of the storm passed over New Orleans East, around 2:30 PM on Monday afternoon, the pastor answered phone calls from concerned community members that were trying to find

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[132] "WDSU's Hurricane Katrina Coverage," posted by "WDSU News,"
https://www.youtube.com/watch?v=sP0EJzsCymA.
[133] *Ibid.*
[134] *Ibid.*
[135] Laurie Lola Vollen and Chris Yang, *Voices from the Storm: The People of New Orleans on Hurricane Katrina and Its Aftermath,* (San Francisco: McSweeny's Publishing, 2008), 58.

loved ones. He and a few of his nuns copied down addresses and set out in a car—which he later traded for a canoe—to go from house to house in search of stranded community members. For six hours, Father Nguyen paddled through his flooded Ward, shuttling survivors from their inundated homes to the second floor of the church's Sunday school.[136]

On the other side of the city, Abdulrahman Zeitoun decided against evacuation as well. Though this project primarily concerns the stories and experiences of black southerners, and Abdulrahman Zeitoun is not a black man, he is still an immigrant of color—this means that he had no intergenerational wealth or pre-existing social networks in New Orleans prior to living there. As a struggling business owner who chose not to evacuate New Orleans, his narrative sheds light on the disproportionate effects of the storm from Abdulrahman's point of view (on the ground in a flooding inner city) and from his wife's point of view (as a struggling evacuee).

Abdulrahman and his wife, Kathy, owned a construction business, Zeitoun A. Painting Contractor LLC, which put them in a unique position prior to the storm's landfall—up until the night of Sunday, August 28th, Zeitoun and one of his employees were boarding up clients' windows and reinforcing their doors with plywood. Zeitoun planned to wait out the storm so that he could protect his home with the same measures:

> …In any case he wanted to be in the house, on which he had spent untold thousands for improvements, to protect it in whatever way possible. His grandmother had stayed put during countless storms in her home on Arwad Island, and he planned to do the same. A home was worth fighting for.[137]

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[136] [Vollen and Yang, *Voices from the Storm,*75.]
It is important to note that this project has largely focused on black communities in the Gulf Coast because of their direct relationship to the industrial complex through enslavement. New Orleans is home to one of the largest populations of Vietnamese immigrants in the United States—many of whom are relatives of Vietnam War refugees. This migration affected communities in the same way in which emancipation affected southern communities—it sparked white flight, leaving many Vietnamese immigrants and first-generation families in the same poor neighborhoods as blacks. [Karen Leong, et al., "Resilient History and the Rebuilding of a Community: The Vietnamese American Community in New Orleans East," *Journal of American History,* vol. 94, no. 3 (2007), 771.]
[137] Dave Eggers, *Zeitoun* (San Francisco: McSweeny's Publishing, 2009), 80.

Even though he refused to leave his home, he forced his wife and kids to pack up and head to her

brother's house in Baton Rouge. It took Kathy three hours to travel 50 miles out of the city. A

drive that normally took an hour and fifteen minutes took almost six hours.[138]

A day later, on Monday, August 29, the initial flooding had come to a halt. The next day,

the levees broke. Zeitoun awoke to a "wide sea" of water around his house that was quickly

rising—he noticed that it was green and clear, indicating that it was lake water. He knew that the

levees had been compromised.[139] He was glad he had stayed behind to move as many belongings

as possible from the first floor to the second. If he had left with his wife and kids, they would

have lost everything.[140] For the next week, Zeitoun traveled around the city's flooded

neighborhoods in a boat, freeing and feeding abandoned pets, and rescuing neighbors when

possible.[141]

The persistence to protect one's own community—not only out of moral obligation, but

because one holds stake in the community's wellbeing—is present in the decisions made by both

Father Nguyen and his nuns, and Abdulrahman Zeitoun. I argue that the same networks of

responsibility prompted countless altruistic acts from families and businesses across the

country—over the next year, 44 states opened some sort of resource center for Katrina evacuees.

Hundreds of churches and schools opened their doors to evacuees across Florida, Alabama,

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[138] Eggers, *Zeitoun*, 67

[139] *Ibid*., 95.

[140] *Ibid*., 98.

[141] The Zeitoun family story does not end here. The Zeitouns also owned a property that they rented out to tenants, which happened to be considerably less flooded than their family home, so Abdulrahman was able to use this as a temporary shelter. In the second week of September, the National Guard arrested him and three others for looting and trespassing on his own property, because he was unable to provide proof of residence (216). All of his paperwork was either lost to water damage or in the family home. Zeitoun was in jail for months, unable to contact any family members, for a crime that he did not commit. Kathy essentially functioned as a widowed, single mother to three children in the weeks that Abdulrahman was missing. As a result, he and his wife both suffer from Post-Traumatic Stress Disorder, and his wife has struggled with short-term and long-term memory loss in the years since.

Mississippi, Louisiana, and Texas.[142] There are examples from every state of the successes of

these social networks. On August 28, 2005, the day before Katrina made landfall, Mississippi's

most widely-read newspaper, the Clarion-Ledger, reported that over 70 shelters across the state

were prepared to accept evacuees from the coast.[143] After Alabama Governor Bob Riley

requested that his community "treat [Katrina refugees] like our own," businesses opened their

doors to the unemployed and public schools waived paperwork to allow evacuated kids to

continue their education.[144] Where such local networks fail, state and federal infrastructures are

supposed to provide a safety net. In a perfect world, these federal agencies and community

organizations would work in tandem. Every member of a community would hold themselves

accountable for the life of their neighbor, and have the resources to guarantee that life provided

to them by federal aid.[145]

These social networks are evident around the Gulf Coast, but they are few and far

between. Not only are the three states the most impoverished in the Union, with the majority of

citizens living under the national poverty line,[146] for reasons outlined in Chapter Three, but the

poorest parts of New Orleans are under the sea level—meaning it is impossible for those

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[142] Staff, "'Katrina' claims at least 68 lives; churches shelter those who fled," Baptist Press, Southern Baptist Convention, August 29, 2005, accessed December 1, 2020, https://www.baptistpress.com/resource-library/news/katrina-claims-at-least-68-lives-churches-shelter-those-who-fled/.

[143] John Fuquay, "Hurricane: 42 shelters open in Miss.; 39 on standby," *The Clarion-Ledger* (Jackson, MS), August 29, 2005, 4a.

[144] Jeremy Gray, "After Hurricane Katrina, Birmingham's generosity was a beacon of hope for 20,000 people," al.com, Advance Local Media, August 28, 2015, accessed December 1, 2020, https://www.al.com/news/2015/08/when_katrina_struck_birmingham.html.

[145] Federally, the five most relevant civil networks (that is, government-mandated networks that exist to serve the national wellbeing as opposed to the individual) to the mitigation of Hurricane Katrina are the Federal Emergency Management Agency (FEMA), the Army Corps of Engineers (ACE), the United States Army and the United States Navy, and the American Coast Guard.

[146] United States Census Bureau, *Quick Facts: United States*, 2010-2019, Maryland: United States Census Bureau, 2019, https://www.census.gov/quickfacts/fact/table/US/INC110218#INC110218, (accessed March 15, 2020.)

residents to receive totally risk-free housing.[147] In non-disaster circumstances, residents in rural

parts of the Mississippi Delta, northern Louisiana, and Alabama struggle to find reliable sources

of groceries and clean water.[148] In times of systemic stress, already insufficient infrastructures

can only fail under the pressure of disaster. The human suffering that arose before and after

Hurricane Katrina was a direct result of a combined failure of these two networks.

On a local level, community preparations were nowhere near adequate to account for the

large numbers of evacuees—Louisiana alone reportedly evacuated over 1.5 million individuals,

roughly a quarter of the state's population, and Mississippi evacuated another 400,000.[149] Not

only was it widely known by officials that roads were unable to withstand evacuation traffic

levels,[150] but these evacuees were encouraged to leave their homes without having a known

destination. Hotels were fully booked across the Bible belt for weeks after the storm.[151] On top of

that, evacuation was the primary form of resilience encouraged by federal and state

representatives, even though officials knew not everyone would regard the warnings: even Max

Mayfield, former director of the National Hurricane Center said "I'm expecting that some people

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[147] Carrie Beth Lasley, *New Orleans Elevation*, map prepared using the U.S Geological Survey for the University of New Orleans' Center for Hazards Assessment, Response, and Technology, accessed December 1, 2020, http://floodhelp.uno.edu/uploads/Elevation_NO_0821.pdf.

[148] Melissa Goodman, Jessica Thomson, and Alice Landry, "Food Environment in the Lower Mississippi Delta: Food Deserts, Food Swamps, and Hot Spots," *International Journal of Environmental Research and Public Health*, vol. 17, no. 10 (May 2020), accessed December 2020, doi:10.3390/ijerph17103354.

[149] Jeffrey A. Green and Anne E. Polivka, "Hurricane Katrina evacuees: who they are, where they are, and how they're faring," *Monthly Labor Review,* United States Bureau of Labor Statistics, March 2008, https://www.bls.gov/opub/mlr/2008/03/art3full.pdf, (accessed December 1, 2020).

[150] Brian Wolshon, "Evacuation Planning and Engineering for Hurricane Katrina," *The Bridge: Linking Engineering and Society* vol. 36, no. 1 (2006): 27-34, accessed April 1, 2020, https://www.nae.edu/File.aspx?id=7393&v=932df41, 28.

[151] "Hilton Hotels Corporation Reports Status of Hotels Affected by Hurricane Katrina; Hilton Family of Hotels Facilitates Evacuation of Guests and Team Members from Downtown New Orleans," Business Wire, August 31, 2005, accessed December 1, 2020, https://www.businesswire.com/news/home/20050831005889/en/Hilton-Hotels-Corporation-Reports-Status-of-Hotels-Affected-by-Hurricane-Katrina-Hilton-Family-of-Hotels-Facilitates-Evacuation-of-Guests-and-Team-Members-from-Downtown-New-Orleans.

who are die-hards will die hard," in reference to those planning to stay home the week of August 29.

In 2006, the Committee on Homeland Security and Governmental Affairs prepared a bipartisan report to "acknowledge what was done well, to identify what was done poorly or not at all" and to "recommend changes in our national system for emergency response that will put local, state, federal, and private responders in a better position to provide prompt and effective relief when disaster strikes."[152] This report, entitled "Hurricane Katrina: A Nation Still Unprepared" sheds light from witness testimonies on the numerous, deadly mistakes made by officials all levels—from the Federal Emergency Management Agency (FEMA) and the Army Corps of Engineers (ACE) to governors and mayors along the coast. Through this source, I can highlight the individual systems that failed within the greater national response to the Hurricane.

The governmental problems began even before Katrina made landfall. Local and state officials had known for ten years that at least 100,000 New Orleans residents would be unable to evacuate themselves in the event of a storm as powerful as Katrina.[153] Community-oriented literature written by the City of New Orleans promised that there was an evacuation plan in place for those who did not possess the means to evacuate. No such plan existed. Instead, days after the storm made landfall, the National Guard was called in to forcefully remove residents from their homes—what the Committee calls "the largest evacuation of a threatened population."[154]

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[152] Committee on Homeland Security and Governmental Affairs for the United States Senate, *Hurricane Katrina: A Nation Still Unprepared*, Senators Susan M. Collins and Joseph I. Lieberman, et al. Special Report no. 109-322, Washington, D.C.: U.S. Government Printing Office, 2006, iii. Accessed as a pdf on November 30, 2020, https://www.govinfo.gov/content/pkg/CRPT-109srpt322/pdf/CRPT-109srpt322.pdf.
The latter purpose for this report speaks to the importance of interagency communication between federal and local infrastructures; it also acknowledges the importance of a sort of federal safety net.
[153] *Hurricane Katrina: A Nation Still Unprepared,* 13.
[154] *Ibid*., 585.

Surviving and able-bodied residents in New Orleans and in coastal Mississippi went from door to door trying to convince their neighbors to follow them out of harm's way.

Likewise, the levee system that surrounded New Orleans had flaws in its design and was poorly maintained in the years leading up to the storm.[155] According to the report, the levees surrounding the central New Orleans metropolitan areas were seriously flawed and failed at their foundations; other levees in greater New Orleans were not properly "armored" and were unable to withstand the massive, cascading water inundation that accompanied the storm.[156] The potential for this failure was known by both FEMA and ACE officials, but neither agency would take on the responsibility of fixing the levees. The Committee found not only that the levees

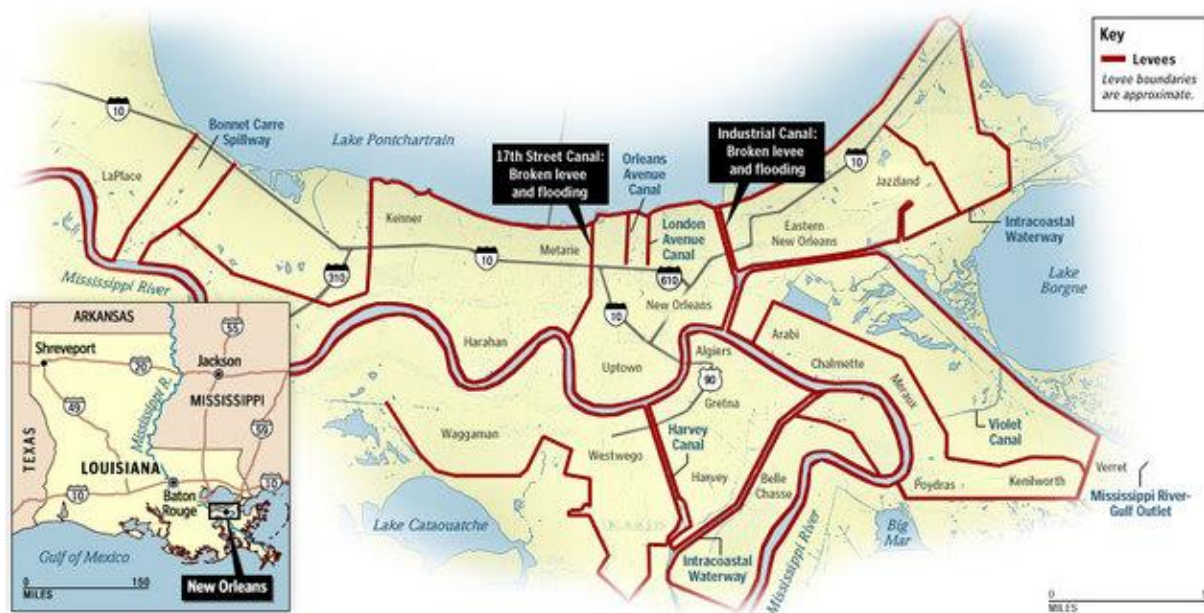Figure 4.1. *New Orleans' Levee System.* R.B. Seed, et al., *Schematic Layout of Levees and Flood Walls Protecting the New Orleans Area*, 2005, via the New York Times, in "Investigations of the Performance of the New Orleans Levee System," accessed online on December 6, 2020, https://biotech.law.lsu.edu/katrina/ILIT/index.html.

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[155] *Hurricane Katrina: A Nation Still Unprepared,* 15.
[156] *Ibid.*, 15.

were *expected* to fail if the coast experienced a storm of Katrina's magnitude, but that there was

never a plan to fix them.

The two levees that failed at their foundation, the 17th Street Canal and the Industrial

Street Canal (Figure 4.1), caused major flooding in central New Orleans and in the Lower Ninth

Ward, respectively. Other weak levees gave way along the banks of Lake Borgne, which borders

the Lower Ninth Ward on the East. Water from both Lake Borgne and Lake Pontchartrain

inundated New Orleans' poorest, blackest neighborhoods—all because FEMA and ACE officials

neglected to properly maintain the levee system. Survivor Leonard Lucas, a reverend at the

Light City Church in the Lower Ninth, remembers persuading his neighbors to leave their homes

and pets after the levees broke:

> "We went house to house telling people they had to leave. They kept coming and coming and coming. People were leaving everything and only taking a packed bag and their kids. Some people had pets and wouldn't leave them. I don't know how many people told me that their pet 'was all they had.' We kept telling everyone to go to Stallings Park in the Upper Ninth [West of the Lower Ninth, across the Industrial Canal]. It was a steady flow of people marching like zombies to the park."[157]

The failure to provide evacuation plans for coastal residents alongside a structurally

unsound levee system forced FEMA's hand in recommending resilience measures to local

community members. Because there were no state-wide and federally-backed evacuation plans,

and because the levee system was destined to fail, officials were allowed to place the

responsibility of one's safety *solely* on the individual, even if the individual was planning to rely

on federal or local infrastructure to survive. This is why evacuation was the primary method of

resilience supported by local officials like New Orleans' Mayor Ray Nagin, who ordered the

city's mandatory evacuation order, and by higher-ups like the NHC's Max Mayfield.

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[157] *Hurricane Katrina, A Nation Still Unprepared,* 29.

In the days after the storm's initial landfall, search and rescue efforts by local teams were virtually impossible. New Orleans' search and rescue fire and police divisions had 5 boats between them. A 2004 request by the fire department to purchase six additional boats was denied by the city. The United States Coast Guard, perhaps the only prepared agency in this entire series of events, ended up rescuing over half of the 60,000 stranded survivors.[158] The Louisiana Department of Wildlife and Fisheries and "out-of-state agencies" accounted for 22,000 of the other rescues. A vast majority of other survivors were rescued by community members like Father Vien The Nguyen and Zeitoun; alongside individuals, civilian volunteer groups quickly grew.

Civilian rescue efforts were highly successful in getting stranded people out of immediate danger, but little could be done for the injured, as local hospitals were flooded and rendered unusable. Dehydrated and hungry survivors, once rescued or after making their own way out of flooded neighborhoods had to make it to one of FEMA's "Points of Distribution" to get food, water, or medical care. Assuming they could find one of these Points (a lack of communication between truck drivers and FEMA representatives often led to supply trucks ending up in the wrong locations), resources like water and Meals Ready to Eat (MREs) were not plentiful enough to sustain the number of survivors.[159]

Even in the months and years after the storm, FEMA failed to provide for Katrina victims. Zeitoun's family applied for a trailer from FEMA because the storm had destroyed their family home. It took months to come, and when it finally arrived, it was keyless and sat three feet off the ground without stairs—rendering it inaccessible.[160] The family sent multiple official

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[158] *Hurricane Katrina: A Nation Still Unprepared,* 27.
[159] *Ibid.,* 600.
[160] Eggers, *Zeitoun*, 308.

request for keys, a staircase, and eventually for it to be removed over the next two years, until it was finally reclaimed by FEMA in April of 2007 (coincidentally the same day Kathy Zeitoun wrote a letter to the editor of the Times-Picayune complaining about FEMA's inadequacies).[161]

In addition to receiving trailers visibly unfit for use, many of FEMA's trailers were riddled with formaldehyde—a consequence that was overlooked in order to increase manufacturing to match the surge of homelessness. For two years, hundreds of residents along the Gulf Coast complained to FEMA about headaches, nosebleeds, and persistent breathing problems. Finally, in 2008, the Center for Disease Control (CDC) tested 518 trailers in Mississippi and Louisiana. The CDC found that formaldehyde levels in FEMA trailers were on average five times as high as they were in other homes in the surrounding area. In some trailers, these levels were close to 40 times as high, causing concern that "residents could suffer respiratory problems and potentially other long-term health effects."[162] FEMA and the CDC recommended that all residents of these trailers stay outside as much as possible to limit their exposure. There has been no follow-up from the CDC since their 2008 analysis—despite the fact that these trailers are still in use.

Alongside actual housing units, the United States Treasury worked with FEMA to issue hundreds of thousands of "temporary housing assistance checks."[163] FEMA failed to send the instructions with the checks, and many survivors used this money to buy food and other necessities without understanding that it was only to be used for housing. Suddenly, these people were indebted to the federal government as a result of a systemic error that could have been

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[161] Eggers, *Zeitoun,* 310.
[162] Mike Brunker, "CDC tests confirm FEMA trailers are toxic," NBC News, NBC Universal: February 14, 2008, accessed December 6, 2020, https://www.nbcnews.com/id/wbna23168160.
[163] John Pierre and Gail Stephenson, "After Katrina: A Critical Look at FEMA's Failure to Provide Housing for Victims of Hurricane Katrina," *Louisiana Law Review,* vol. 68, no. 2 (2008), 446.

avoided. Additionally, FEMA also sent out housing vouchers to be used at hotels and rental

units. A good idea in theory, these vouchers tended to cause more difficulty than remediation for

survivors: small hotel owners and landlords had to wait to be repaid by the government after

accepting vouchers, a luxury many could not afford. More often or not, landlords would not

accept vouchers, citing FEMA's "'broken promises, unreasonable deadlines, and mind-numbing

bureaucracy."

For example, Renee Martin, a black clinical nursing assistant who lived in the West

Bank, was given FEMA vouchers for her rent, but her landlord refused to accept them.[164] Dan

Bright, a black man wrongfully convicted of first-degree murder and released only a year before

the storm, was in financial limbo after receiving two-week, temporary boarding from FEMA: "I

might be in a shelter again. I might be on the streets because I don't have the finances to even

rent me a place. And FEMA is givin' me all kinds of runaround."[165]

Thus, we reach a predicament shockingly similar to the one faced by Farmer's

interviewees in Haiti or Peru. The portrayal of Southerners, particularly New Orleanians, in the

media post-Katrina has come under harsh criticism, and for good reason. In *Manufacturing*

Consent: The Political Economy of the Mass Media, Herman and Chomsky argue that power

inequalities inform the presentation of news.[166] Johnson, Dolan, and Sonnett argued in 2011 that

this propaganda model of news reporting was extremely evident in post-Katrina broadcasts—

blacks were rarely interviewed but were almost always pictured in a negative light, while whites

composed 87 percent of the coded interviews.[167] The vilification of the black Katrina victim was

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[164] Vollen and Ying, *Voices from the Storm*, 196.
[165] Vollen and Ying, *Voices from the Storm*, 184.
[166] Edward Herman and Noam Chomsky, *Manufacturing Consent: The Political Economy of the Mass Media*, (New York: Pantheon Books, 1988, 2002), xi.
[167] Kirk Johnson, Mark Dolan, and John Sonnett, "Speaking of Looting: An Analysis of Racial Propaganda in National Television Coverage of Hurricane Katrina," Howard Journal of Communications vol 22, no. 3, (2011): 308, accessed Nov 1, 2020, doi.10.1080/10646175.2011.590404.

accomplished in part by journalists deciding that acts like looting were out of lawlessness rather than desperation (Figure 4.0).

Political scientist Martin Gilens offers an explanation for this phenomenon: the reproduction of bias through the media. Media, after all, is a human construct, and is thus subject to human biases—since Americans widely rely on the media as a source of legitimate information about their society, mass media is easily able to shift social perceptions and prejudices. It has already been established that blacks account for a large portion of American's population in poverty—29 percent of poor Americans were black when Gilens was writing in 1996, and almost 21 percent in 2018.[168] Despite this, public conceptions of poverty are that the impoverished are mostly African American. A national survey showed that 55 percent of Americans thought that there were more blacks under the poverty lines than whites. The reason for this, to Gilens, is that poverty is closely tied to the false claim that economic disadvantages (and thus opportunities) are widespread, and that those "who [work] hard can get ahead."[169] As we know from Chapter Three, employment opportunities for blacks were not limited because of work ethic, but because of discriminatory workplace practices.

Gilens analyzed stories of poverty in newspapers, magazines, and television news stories to find that blacks were pictured in 62 percent of featured images—twice the actual poverty level at the time of Gilen's analysis. The national assumption that unemployment and poverty in the black community is a direct result of laziness coupled with a media that overrepresents black people in situations of poverty leads to a systemic association of poverty and welfare abuse with the black community. For this reason, the poor black community is relinquished to the

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[168] Martin Gilens, "Race and Poverty in America: Public Misperceptions and the American News Media," *Public Opinion Quarterly,* vol. 60, no. 4 (1996), accessed December 6, 2020, https://www.jstor.org/stable/2749633, 518.
[169] Gilens, "Race and Poverty in America: Public," 518; "The Population of Poverty: USA," Poverty USA, 2018, accessed December 7, 2020, https://www.povertyusa.org/facts.

designation of "undeserving poor," a status that creates more resentment than sympathy for community members *and* leaders.[170]

Misperceptions of the poor and of welfare recipients in the media easily shape public opinion—Gilens found that 71 percent of Americans support the increase in government spending to fight poverty, but that 63 percent believe welfare spending should be decreased.[171] This is a direct result of the cyclical sort of bias that exists between the media's portrayal of poverty and the audience's pre-existing stereotypes about blacks. The black welfare user, to the American public, is largely seen as the welfare *abuser*. If public opinion agrees that this group is undeserving of federal aid, it makes sense that governmental policies would follow suit—a potential explanation for the lack of preparation and systemic neglect witnessed after Hurricane Katrina, and for the depiction of Katrina survivors as 'looters.'

Similar to Farmer's argument that patients only fail to follow medical advice when they physically cannot keep up with lengthy regimens,[172] I argue that chronic poverty was the primary motivator for people of color who decided to wait out Hurricane Katrina in their homes. Like medical infrastructure in impoverished communities, resilience methods (based in social networks) *existed* in Mississippi, Louisiana, and Alabama, but these infrastructures were not fit to fulfill the needs of every community member. People who *did* follow evacuation warnings were met with clogged highways, interstates, shelters, and hotels from the coast to Memphis.[173] Those New Orleanians who waited until the last minute were unable to find refuge and ended up homeless in the streets or crowded in the Superdome, where they were forced to live in

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[170] Gilens, "Race and Poverty in America," 523.

[171] Martin Gilens, *Why Americans Hate Welfare: Race, Media, and the Politics of Antipoverty Policy*, (Chicago: University of Chicago Press, 1999), 28.

[172] This includes: inability to afford medicines, lack of transportation, etc.

[173] *Ibid.,* 4a.

inhumane conditions with little food and no running water, while being portrayed as unlawful

and savage by the media (Figure 4.2).[174]

Figure 4.2. *Image of Katrina Victims Captured by the Associated Press.* NBC captioned this photo, "Looters take advantage of New Orleans mess," writing that looting took place everywhere around the city—sometimes even in front of police or National Guard officers. Is it looting or surviving? [Dave Martin for the Associated Press, Title N/A, August 30, 2005, accessed online on December 6, 2020, https://www.nbcnews.com/id/wbna9131493.]

This text has overwhelmingly referred to those trapped after Hurricane Katrina as

'survivors' as opposed to 'victims.' This was a purposeful decision: to be a victim is to be

trapped in the state of victimhood, to be a survivor is (as indicative by the root word) to survive

and adjust to the context of a life-threatening event. Zeitoun and Father Vien the Nguyen showed

their humanity by risked their lives to rescue others; Dan Bright and Renee Martin showed their

humanity through their struggles to work within FEMA's convoluted voucher system. All four,

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[174] "Hurricane Katrina: A Nation Still Unprepared," 10.

along with the WDSU team, exemplified the somewhat patchwork—yet valid—sort of community resilience that was possible under such duress and with such few resources.

Without firsthand experiences, it would be impossible to begin to understand the personal ramifications of the federal interagency failures that punctuated Hurricane Katrina's impact on coastal communities. Journalistic sources, as we have seen, are prone to bias and prejudice, and, although the Committee was exceptionally honest and forthcoming, legislators and government officials are often guilty of the same prejudicial behavior. It is impossible to understand the failures of FEMA and ACE as structural violence, or to hold either agency accountable, without proof of disrupted autonomy and social networks on an individual level.

Conclusion

The human suffering that ensued in the months and years after Hurricane Katrina hit the

Gulf Coast cannot be studied a result only of the storm's severity. Instead, it must be considered

as a result of slow violence perpetuated by infrastructural neglect by local and federal

governments. The victims of Katrina varied widely. At first, this was a research project about

Mississippi, Alabama, and Louisiana. As my research progressed, I realized that, although the

two former states have histories crucial to the development of labor and civil rights

infrastructures in the Reconstruction Era, the majority of narratives (and really, the majority of

primary sources) related to Katrina came from New Orleans residents. Why?

The answer is complicated. First, as discussed in my second chapter, physical

modifications of the coastline that began in the mid 1800s (and continued into this century with

the ACE's levee system) are responsible for a significant loss of marshland life. This primarily

took place in or around Lake Pontchartrain, Louisiana. Since an unbalanced soil composition

decreases the ability for a soil system to absorb water, these man-made changes to the coast have

significantly reduced its potential for ecological resilience in a time of flooding. Second, this low

ecological resilience was coupled with a levee system that was deeply flawed—not only were

many of them designed and built inefficiently from their foundations, but few of the levees

around New Orleans were regularly serviced, maintained, or reinforced. The failing levees,

disrupted marshland, and the bowl-like shape of New Orleans makes it geographically more

prone to water inundation than other parts of the coast.

My next question was how: How did federal and state governments seemingly manage to

neglect an entire coastline? This answer is also multifaceted, and also sheds light on why a lot of

research seemed to always point me back to New Orleans City. Like the other more populous

cities and towns on the Gulf Coast, New Orleans relies on tourism to support the city's economy. But unlike those other cities, like Biloxi, Mississippi, for example, which profits largely from casino stays and visits to the beach,[175] and therefore has a lower year-around population and thus a wealthier population, New Orleans is different. Its colonization with the intent of a port-based trade nexus put its first residents—both consensual residents and enslaved residents—at the whim of a very precarious economy. When the slave trade ended and the South was forced to embark on an era of financial and social reconstruction, New Orleans fell farther than any other city on the coast.

Mississippi made the largest strides in attracting new industries to the region, but that proved to cause more harm to black individuals than stymy low wages and Depression-Era unemployment. Mississippi was able to do this largely by sacrificing the wellbeing of its workers to appear more attractive to industrial managers—Louisianan governors were not as eager to give tax breaks and rent-free stays to factory owners.[176] Across Alabama, Mississippi, and Louisiana, black people have been disproportionately employed and underpaid for as long as they have been legally permitted to work the same jobs as their white counterparts. Similarly, black people have also been confined largely to laborious, physical agricultural or domestic labor—and unequal access to education ensures that this pattern is maintained from generation to generation.

The largest industries encouraged to move to Mississippi and Alabama during the Reconstruction Era were mostly textile-based. In Louisiana, these industries were almost entirely based in natural resources, and they remain the same to this day: the industrial refinement of

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[175] https://visitmississippi.org/wp-content/uploads/2020/06/Economic-Impact-Record-2016.pdf
[176] Cobb, James, *The Selling of the South: The Southern Crusade for Industrial Development, 1936-1990, 2nd ed.* (University of Illinois: 1993), 114.

sugar cane, fishing, oil drilling, and natural gas mining contributed the most to the state's Gross

Domestic Product in 2019. Not only are these jobs labor intensive and agricultural in nature, and

thus more advertised and given to people of color, but the epicenter of all of these industries is

still New Orleans.[177]

Although Hurricane Katrina itself was an isolated weather event, as opposed to other

industry-based environmental hazards,[178] it is valuable to consider the aftermath as the effect of a

series of environmental injustices. Luke Cole and Sheila Foster write that the disproportionate

distribution of environmental hazards is not random, but a "product of the same social and

economic structure which had produced de jure and de facto segregation and other racial

oppression."[179] Cole and Foster's book, *From the Ground Up,* concerns toxic waste in poor,

black, post-urban communities. Even though parts of New Orleans sat without working

plumbing under feet of stagnant water for weeks after Katrina (and this led to an innumerable

amount of health and wellness concerns), toxicity was not a major pillar of this research project.

I argue that the severe effects of a meteorological event, though inherently different from a

deadly chemical leak at a plant located on "the wrong side of [the] tracks,"[180] can still be traced

to similar acts of structural violence.

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[177] The emphasis here is necessary because in Mississippi and Alabama, black people concentrated in different areas based on employment opportunities. Mississippi is probably the best example of this—the Mississippi Delta has a black population almost four times as high as the state's black population, and is also home to its most fertile soil. (http://www.ruralhome.org/storage/documents/deltaoverview.pdf) This is because agricultural jobs were the most accessible to blacks post-emancipation; generational poverty has made these communities inescapable for the greater population.

[178] For example, Cancer Alley, a toxic industrial zone between Baton Rouge and New Orleans. [Luke Cole and Sheila Foster, *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement*, (New York: New York University Press, 2001), 78.]

[179] Cole and Foster, *From the Ground Up,* 21.

[180] Melissa Checker, "'But I Know It's True': Environmental Risk Assessment, Justice, and Anthropology," *Human Organization,* vol. 66 no. 2 (2007), 113.

Not only was New Orleans hit head on by Katrina, unlike most of coastal Mississippi and Alabama, but New Orleans is a quintessential example of the sort of post-industrial slow violence written about in *From the Ground Up*. By taking advantage of a community's poverty and desperation for work to decrease opportunity cost (thereby subverting the rights of the worker), the labor networks outlined in Chapter Three function in the same manner as the socioeconomic structures described by Cole and Foster. The systemic neglect that followed—in transportation, housing, and economic mobility—was therefore felt more intensely by those closest to this sort of inner-city development. New Orleans is a truly unique region, both because of location and demographics, but also because of its colonial history (let us not forget that Bienville proceeded with city planning in spite of flooding strictly for perceived economic potential). This is not by any means to stratify human suffering, but to provide an explanation for why this project seems to focus on New Orleans despite the initial claim that it would be a historical survey of Alabama, Mississippi, and Louisiana.

What does all of this mean for the future of New Orleans and its people? In an interview on August 30, 2005, former House Speaker Dennis Hastert said that it made "no sense" to rebuild the nearly sunken city. "It looks like a lot of that place could be bulldozed," he continued.[181] Hastert later retracted this statement, and denied accusations that he was advocating for the abandonment of the city, but he was not alone in his sentiment. Geophysicist Klaus Jacob seconded his statement a week later, adding that Katrina was not even a worst-case scenario: had the storm passed slightly West of New Orleans, it would have flooded significantly faster,

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[181] Associated Press, "Hastert questions proposed efforts to rebuild," NBC News, September 1, 2005, accessed November 30, 2020, https://www.nbcnews.com/id/wbna9164727.

increasing damage and loss of life significantly.[182] Others, like St. Louis professor Timothy

Kusky, argue that "New Orleans naturally wants to be a lake…A city should never have been

built there in the first place."[183]

In many ways this argument is true—Bienville should have heeded the advice of the

indigenous people who knew the land much better than he did. Frankly, settler colonialism and

the industrial imperialism (as well as the genocide of Native Americans, the enslavement of

Africans, and the suppression of African Americans) that took place in much of the South should

not have happened either. But because it did, we must approach problems that arise as the result

of a centuries-long history of infrastructural violence.

The best way to do this is not by abandoning New Orleans, nor is it by abandoning the

entire Gulf Coast. That would only benefit those who have another place to go, or the means to

operate outside of their immediate social networks. As we know from the failed evacuations

before Katrina, there is a large coastal population that will never leave. Not only because they

have cultural ties to their homes, but because their homes are all they have. The least invasive,

most effective means of guaranteeing general wellbeing before the next severe storm requires

restoring community and environmental methods of resilience.

On a community level, there is evidence that this has been done in the last 15 years—

FEMA now no longer relies on personal means of evacuation as a major form of resilience.

Because of the added risk of the COVID-19 pandemic, FEMA has started a system of non-

congregate sheltering for victims of disasters.[184] Not only does this prevent crowding and

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[182] Jack Shafer, "Don't Refloat: The case against rebuilding the sunken city of New Orleans." Slate.com, September 7, 2005, https://slate.com/news-and-politics/2005/09/the-case-against-rebuilding-the-sunken-city-of-new-orleans.html.
[183] Shafer, "Don't Refloat."
[184] Federal Emergency Management Agency, "FEMA Emergency Non-Congregate Sheltering during the COVID-19 Public Health Emergency (Interim)," Keith Turi. FEMA Policy 104-009-18, published online, June 17, 2020. https://www.fema.gov/media-library-data/1592489053244-

unequal access to resources in a shelter like the Superdome, but social distancing measures

inadvertently force FEMA to recognize survivors as individuals. Increased use of social media

platforms allows them to more widely broadcast warnings and safety measures. Online literature

places value on community and volunteer-based organizations—the crux of community

resilience—far more than it did in 2005.[185] Perhaps most notably, FEMA's resilience literature,

as of the summer of 2019, includes instructions for how to shelter in place.[186] This is almost

remarkable when we remember that those who did not evacuate in 2005 were largely blamed or

villainized for their suffering.

Environmentally, building resilience is less nuanced. Instead of building new and

improved concrete levee systems in the same places that they have failed in the past, I conclude

with the argument that the city of New Orleans and other coastal regions should consider green

over gray infrastructure. In their paper "Ecosystem-Based Coastal Defense in the Face of Global

Change," Belgian scholars Stijn Temmerman et al. show that the restoration of coastal

ecosystems is more ecologically sound *and* cost-effective than conventional methods of coastal

engineering. As was shown in Chapter Two, man-made engineering in the form of dykes or

levees exacerbates land subsidence (in other words, disrupts the soil's structural integrity and

makes it more likely to collapse) and decreases sediment accumulation. Together, these effects

179ccfba96c36d22d32f9cbbea0108bf/fema_public_assistance_non_covid-19_NCS_Policy.pdf, (accessed December 1, 2020).

[185] "Voluntary Organizations Play Vital Role in Recovery," FEMA: News & Multimedia, Federam Emergency Management Agency, November 18, 2020, accessed December 1, 2020, https://www.fema.gov/press-release/20201118/voluntary-organizations-play-vital-role-recovery.

[186] United States Department of Homeland Security, *Planning Considerations: Evacuation and Shelter-in-Place: Guidance for State, Local, Tribal, and Territorial Partners.* Department of Homeland Security: July, 2019, https://www.fema.gov/media-library-data/1564165488078-09ab4aac641f77fe7b7dd30bad21526b/Planning_Considerations_Evacuation_and_Shelter-in-Place.pdf, (accessed December 1, 2020), 22.

disable a coastline from being able to naturally respond to rising sea level or absorb flood inundation.

Restoring coastal marshlands near Lake Pontchartrain and eventually adding reef or tidal marshes to the Gulf of Mexico would provide "extra water storage and friction" that would dramatically decrease the level of coastal flooding. This is not an entirely new concept— Temmerman et al. published in 2013, and at that time, marshland restoration had already begun in the Mississippi Delta (with hopes of mitigating flooding of the Mississippi River). Engineers there found that every kilometer of marshland reduced hurricane flooding by five to ten centimeters. In other words, 30 square kilometers of marshland could almost halt a ten-foot storm surge.[187]

As the globe warms and sea levels rise seemingly out of our control, the future habitability of New Orleans and the Gulf Coast is increasingly precarious. For the time being, the best way to resolve the cyclical suffering of these hurricane victims is by ensuring that they have a sort of natural system of protection. This project has shown that the United States' federal government fails to take preventative measures to reduce horrible outcomes of a disaster, and struggles even more after the disaster has occurred. At least for the time being, green infrastructure provides an ecological resilience for the people neglected by their local and federal governments. We must remember that no one *wants* to suffer, and we must respect the many reasons one chooses to stay in an increasingly dangerous environment. Abandoning one's home, culture, and history should only be offered as a last resort.

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[187] Assumes that these ecosystems function most efficiently, with a single km of marshland capable of reducing storm surge by a maximum of 10 cm. 30.48 cm in a foot = 3.05 km of marshland to achieve a one-foot reduction in storm surge.

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