ARE YOU READY FOR IT?

EXAMINING SECURITY IN CONTEMPORARY DISASTER PREPAREDNESS, FROM NORMAL TO NOACHIAN

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EXAMINING SECURITY IN CONTEMPORARY DISASTER PREPAREDNESS, FROM NORMAL TO NOACHIAN

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Cornell University 2021

Abstract

Is it normal for households to go to extreme lengths to prepare for disaster? I argue yes. Extreme preparedness is at the very least *logical* and can be considered normal under the right framing. Threats range from the mundane to the existential and come in various forms: chlorine gas spills, zoonotic diseases, typhoons, solar flares, civil unrest, and war. Response and recovery to these assorted hazards is measured in hours, days, and sometimes years. It is an expected function of a state to plan, rehearse, and prepare for cataclysmic events. Numerous governments currently encourage or even mandate relatively high levels of household disaster preparedness or have done so in the past as a proactive mitigation strategy. By extension then, it should be natural for individuals and households to attain – or even surpass – these levels. Those who go to extreme levels have throughout the years been referred to as survivalists or preppers even though their actions often match state plans for continuity of government in an existential crisis. Contrary to popular depiction however, many of these individuals are not fringe as to ideology or demographic composition, nor are they monoculture. Our modern understanding of this phenomenon is hampered by stereotype, a lack of quantification, and a lack of definitive categorization and theorization. I fill in many of the gaps of a forty-year legacy problem, primarily in an American setting, but with insights to the global presence of these individuals. I find that in America, 11.4 million people have the means to survive at home for 31 days or more after a disaster. Additionally, I theorize a new international model, with the theory of ontological security at its core, to understand how extremely prepared individuals can be identified and then split into extremist and non-extremist (ideologically speaking) categories and how both groups relate back to average civilians. I provide one implication of this finding looking at US island residents, who I find prepare at rates 40-135% greater than their mainland counterparts, possibly due to their geographic isolation where aid and recovery efforts would be delayed.

BIOGRAPHICAL SKETCH

Chris Ellis grew up in Washington State and commissioned into the Army in 1999. He has served in various operation and training assignments to include Battalion Command of the 2nd Battalion, 289th Infantry Regiment. Chris completed multiple deployments to Kosovo, Afghanistan, Iraq, and Kuwait where he witnessed disaster firsthand. He focuses his research on disaster preparedness, resiliency, and Civil Defense. He is a 2019 and 2021 Obstacle Course Racing World Championship qualifier, a graduate of the Real World Risk Institute taught by Nassim Taleb, and practices personal readiness skills which he passionately shares with others.

Chris holds a Bachelor of Science from the University of Washington in Biology, a Master of Public Administration from the University of Kansas, a Master of Military Art and Science from the Command and General Staff College, and a Master of Military Art and Science from the School of Advanced Military Studies. Chris is married to Kim Ellis, a fellow University of Washington alumni, a Cornell graduate from the horticulture department, a teacher, and my best friend.

You can follow Chris on Twitter @Prep4Disasters.

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Attendance at Cornell has been a blessing from God from start to finish. His divine providence has watched over me every step of the journey. It was my wife's desire to attend Cornell so she could further her passion in horticulture that initially led me here, God just opened the right doors. After 20 years of taking her around the world at the Army's whim, it was time to put her first. She is my rock. My two wonderful children were also very supportive. My daughter, Tiffani, currently attending Indiana University, has always cheered me on. With three of us in college at the same time, the competition for best grades was stiff, but the ladies beat me! My son, Matthew, who graduated this year from Ithaca High School, helped keep me balanced.

The dissertation committee is outstanding. Dr. Sarah Kreps, as my advisor, assisted in all things, from the application interview through working with the military's accelerated timeline requirements. Thanks Sarah, your support from start to finish meant the world to me. Dr. Sergio Garcia-Rios is one of those passionate and gifted professors who deeply cares about learning and guidance. Sergio, thank you for helping such a neanderthal as myself achieve at least a baseline of coding and quantitative understanding. And then there is Dr. Doug Kriner who went through my writing with a fine-toothed comb and provided well needed constructive criticism to sharpen my arguments and assist in clarity. Doug, thank you for sparing some of that precious commodity: time. And thank you to the whole team for supporting a topic as analytically eclectic as disaster preparedness.

As to others, I am indebted to the work of Nassim Taleb whose writing I was unfamiliar with until several years ago. His concepts, explained beautifully in his books and at the Real World Risk Institute, helped me to see risk in a way I was unable to verbalize and visualize.

Thanks! Adi Rao critiqued drafts and often served as a discussant in internal paper workshops. Thank you for your friendship Adi and all of our conversations. Professor Rebecca Brenner, from Cornell's Public Administration department was a blessing also and diligently served as an external reader. Rebecca, I loved your disaster class and the diverse literature and connections you provided. I appreciate the feedback from prepper researchers Dr. Anna Bounds and Dr. Chad Huddleston. Joseph Faulk, the Preparedness Data Lead for FEMA was incredibly responsive to inquiries for understanding and supportive; thank you! I am grateful for the work of General David Perkins who created the Army Strategic Planning and Policy Program (ASP3) to field Ph.D. students within the Army. Without him, this program would not exist. Dr. Robert Davis, the director of ASP3, has the unenviable job of herding all the cats and promoting the program across the force. And finally, Professor Bradley Garrett, a fellow preparedness researcher whose works on this subject are top notch. Your encouragement and feedback were vital and came at the perfect time.

While I am not thankful for COVID-19, nor the destruction it has wrought, the timing was fortuitous. The impact of large scale, catastrophic disasters received a global look. It is easier to sell flood insurance when it is pouring down rain and the upstream dam is overtopping. More scholars are now rightfully turning their gaze to these events. I hope to provide a solid foundation of understanding to others and take this work with me to future military jobs to help save and protect the lives of others. The wise build their houses upon rocks.

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GLOSSARY

Challenger: a researcher or journalist who contests the Dominant view by offering non-extremist examples of survivalists or preppers as typical of the group. These portrayals are American and international in nature. Challengers often defend, or are at least sympathetic to, the highly prepared who are non-ideologically extreme.

Disaster: 1) commonly used in this dissertation in a generic sense as utilized in the Sendai Framework from the United Nations Office for Disaster Risk Reduction. 2) Formally defined as "[A] sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins" International Federation of Red Cross and Red Crescent, n.d.

Dominant: a researcher or journalist who depicts all, or almost all, survivalists or preppers as a monolith of white, racist, homophobic, Islamophobic, poorly educated, far-right, rural, gun owning, anti-government zealots who openly cheer for the end of the world. These portrayals are almost exclusively American. Dominants usually attack, with their writing, the extremely prepared.

Hazard: "a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by

human processes (environmental degradation and technological hazards)" United Nations Office for Disaster Risk Reduction, 2015.

Preparedness: "the knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters" https://www.undrr.org/terminology/preparedness.

Prepper: 1) a heavily contested term that I equate with survivalist. At a minimum, they are people who take a variety of active steps to prepare for future disasters at levels often far beyond official recommendations of 3-14 days. Some extremists can be preppers, but not all preppers are extremists. 2) People "distinct in their concerns towards 'threats' beyond natural disasters (potentially including terrorist attacks and international wars) and the prospect of medium-to-long-term survival" Mills, 2019, Preparing for the unknown… unknowns.

Prepping: "distinct from ordinary short-term preparedness for hurricanes and other natural emergencies, being distinguished by its application towards manmade disasters as well as natural ones; medium- to long-term survival lasting weeks, months, or even years; and violent social breakdown amidst collapse" Mills, 2019, Preparing for the unknown… unknowns.

Readiness: for this work, used synonymously with preparedness.

Resilience: "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions" United Nations Office for Disaster Risk Reduction, 2015.

Resilient Citizen: a private actor who has taken paired steps in advance, directly relating disaster risk to disaster preparedness, to increase their household resiliency to a level of 31 days or more and espouses no ideologically extremist views.

Survivalist: see prepper.

Threat: "natural, technological, or human-caused occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment, and/or property" https://training.fema.gov/programs/emischool/el361toolkit/glossary.htm.

Vulnerability: "the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards" United Nations Office for Disaster Risk Reduction, 2015.

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CHAPTER ONE

Introduction

Prologue

On 11 March 2011, the 9.0 Tohoku earthquake struck beneath the ocean near Japan's east coast with enough energy released to power Los Angeles for 200,000 years (Buchanan, 2014). Soon after, a massive tsunami, at points measuring over 120 feet in height, slammed onto the main island. The volume displacement of seawater was so significant that in places the wave's impact extended as deeply as six miles inland (National Oceanic and Atmospheric Administration, 2012). The devastation was immense. Cars, schools, airports, religious sites, homes, businesses, bridges, and other infrastructure were mangled or destroyed. Nearly 16,000 people died, and 6,000 were injured. Almost 400,000 buildings were at least 50% collapsed or more, with another 700,000 damaged. Over 4,000 roads, 29 railways, and 116 bridges needed repair; another 45 dikes broke (National Police Agency of Japan, 2019).

While the Fukushima Daiichi nuclear plant withstood the seismic disturbance, the resultant wave cut both primary and backup power to three of the eleven reactors, causing the cooling systems to fail and the subsequent meltdown and breach of their three cores (World Nuclear Association, 2018). Explosions at the site released radioactive particulates into the air, prompting Japan's government to order residents' evacuation within 20 km of the plant (Ibid). This edict was later expanded to a voluntary evacuation request for those between 20-30 km away. The government has partially lifted the restrictions in certain areas, declaring them safe, but only after raising the international benchmark for radiation exposure by nearly 2000%, from 1.0 millisieverts (mSv) to 20 mSv (Little, 2019). The United Nations believes this to be a violation of human rights (Schlanger, 2018). Problems at the plant continue to the present day. Since the nuclear fuel has not yet been extracted, it remains at the base of the cracked plant,

constantly cooled by groundwater seeping in and injected water, much of which is in tanks that the Tokyo Electric Power Company (TEPCO) is constantly constructing to keep up with demand (Takahashi, 2019). In January of 2020, TEPCO announced it would take another 44 years to fully decommission the plant (The Japan Times, 2020). To date, it is the only incident other than Chernobyl to reach the highest accident level of seven on the International Nuclear and Radiological Event Scale.

The impact was not limited to just Japan. Within one week, Fukushima radiation clouds filled with radioactive and cancer-causing Iodine-131 and Cesium-137 were over the continental United States and within 18 days had circumnavigated the globe (Hsu et al., 2012). In April 2013, a study published in the *Open Journal of Pediatrics* found that children born in five western US states (Alaska, Hawaii, Washington, Oregon, and California) in the immediate months after the Fukushima disaster had a 28% greater occurrence of congenital hypothyroidism (a loss of thyroid function) due to Iodine-131 levels measuring 211 times greater than normal (Mangano & Sherman, 2013).

Among the carnage of this entire ordeal was one incredible story, known as the Miracle of Kamaishi. The tale begins, however, in Thailand several years earlier with another calamity and providential outcome. In December of 2004, the third-largest earthquake ever recorded, the 9.1 Sumatran earthquake, triggered under the floor of the Indian Ocean with the power of over 1,000 hydrogen bombs (Jones, 2018). It spawned the deadliest tsunami in modern times, with over 200,000 fatalities (Roos, 2020). The most significant direct physical and economic hits were for Indonesia, Thailand, Sri Lanka, and India. Fatalities were attributed as far away as Yemen and Kenya (Jones, 2018). Many American and European tourist deaths occurred as well,

and it was the worst natural disaster in terms of human life to affect Sweden and Denmark in over 100 years since Sweden lost 543 vacationing citizens and Denmark 46 (Rubin, 2019). Nevertheless, Thailand's Mai Khao Beach did not register a single human life lost because of one 10-year-old British girl, Tilly Smith. Tilly learned about tsunamis three weeks earlier in school and screamed at those on the beach to evacuate immediately. Her actions saved the lives of nearly 100 people (Muir-Wood, 2016). Professor Toshitaka Katada surveyed Thailand's aftermath.[1] Learning from Tilly Smith, he created a curriculum for schools in Kamaishi, Japan, a city with a long history of deadly tsunamis. Katada's instructions broke with tradition and taught children to act upon disaster warning signs, even if adults around them were not. When the 2011 earthquake struck, because of Katada's teachings, students at the Kamaishi East Junior High School began to run. Their action prompted the nearby teachers and students of Unosumai Elementary School to flee as well. While other schools in the region had up to 80% casualties, these two schools did not suffer a single student death.

Foundations in Disaster Preparedness

A. The underlying logic of disasters and preparedness

We know that many disasters follow power laws. The Gutenberg-Richer law dictates earthquakes and avalanches and Levy distributions explain stock and commodity observations (Bak, 1996). In the real world we see far more ice storms that knock out the power than Category Five hurricanes, and more small-scale military skirmishes than nuclear war. As severity increases, frequency decreases. This can be illustrated by a simple graph (Figure 1).

[1] Katada's actions here are a summary from Muir-Wood's book.

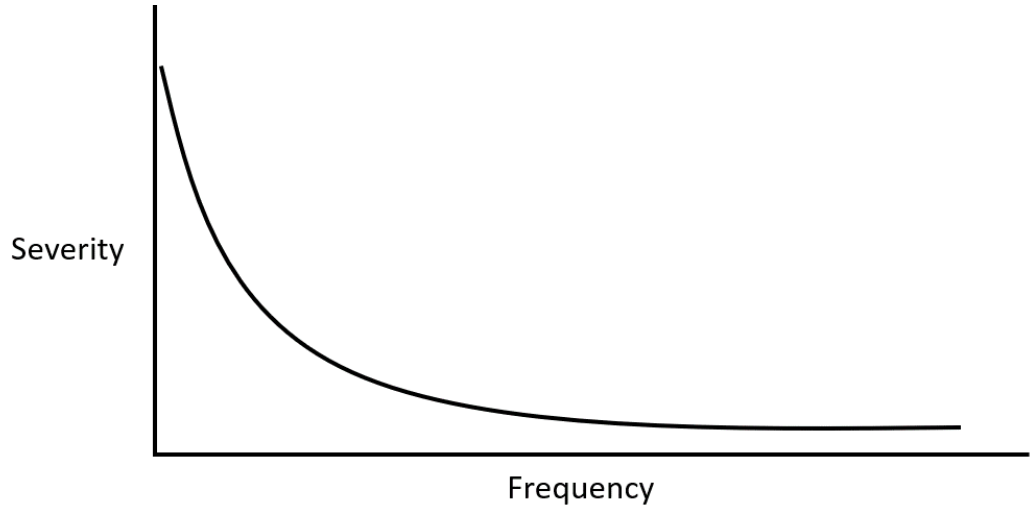

Figure 1: A rudimentary graph of disasters

In this hazardous environment, states negotiate with citizens – via cultural, political, and economic influences – on how much safety to provide as different states are located on various points along this diagram. Since not every catastrophe can be prevented or even minimized, some places are safer or riskier than others. However, higher safety usually entails higher cost. Because most events – even in high-risk areas like islands, near volcanoes or fault lines – are small, people are typically happy with low cost, low mitigation safety. However, when a "big" event strikes, even advanced nations and their citizens are caught outside their mitigation window. These disasters are rarely black swans and unforeseen, but the lack of predictability and the cost – both financially and mentally – of unwavering vigilance retards constant preparedness or risk insurance (Flynn, 2007; Kunreuther & Useem, 2010; Meyer & Kunreuther, 2017). Chance events are really probability calculations, and sometimes moments of criticality entail cascading effects, much as a sand pile is steady until just a single grain sets off a devastating chain reaction in a seemingly stable system (Bak, 1996). Extreme disaster can therefore be considered "normal" (Clarke, 2006). What is obvious in hindsight comes down to

individual and political priorities. Hurricane Katrina, the Exxon Valdez oil spill, COVID-19, the 2007-2008 economic collapse; none of these were flukes, but societies made decisions with multiple impacting variables on how they would prevent or prepare for such catastrophes. There is a "logic of failure" (Dörner, 1996).

There is a difference in impact, however. Countries can afford a law of averages. They can typically survive wars, famines, and outbreaks of disease. They can have, as policy, a plan that allows for 15 citizen deaths per 100,000 people, or whatever number the populace demands (keeping in mind cost). People often are not so lucky, dead is dead. To the government, a flood wiping away a home is a statistic. To the individual, it is ruin. Nassim Taleb illustrates this via his time and ensemble probability discussions as shown in Figure 2 (Taleb, 2018, 2020).

To summarize Taleb, ensemble probability is when 100 people go to a casino and gamble, if person 28 goes bust, that has no effect on gambler 29. This is analogous to the risk that states take. However, if ONE person gambles everything 100 times, if they go bust on gamble #28, there is no more gambling. The 29th roll of the dice or spin of the roulette wheel does not happen. The individual faces ruin. Individuals, to survive, are advantaged by utilizing a different logic, not one of averages, but one that entails the rationality and probabilities involved in repeat play and consistent risk exposure.

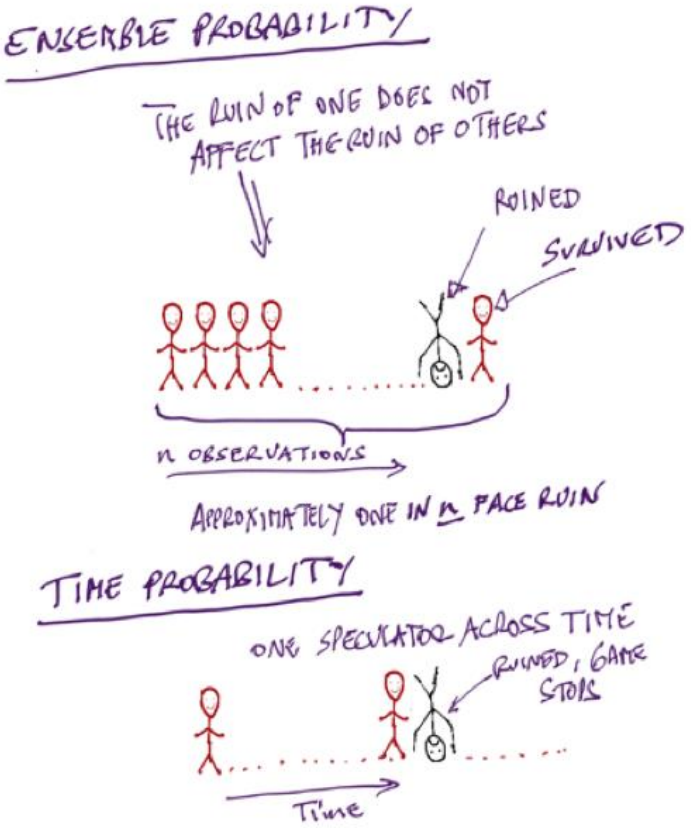

Figure 2: Ensemble probability pertains to groups; time probability is repeat play involving a single actor

This begs the question, if disasters follow a certain pattern, extreme disasters are normal, and states will only – or *can* only – provide a set amount of mitigation, is it logical for – at least some people – to prepare at far higher levels? The answer is yes. Repeated exposure to large scale events carries the cumulative risk of both known and unknown risks. Increases in household preparedness, even incremental, confer a survival advantage. Evolutionary theory heavily supports this position. At a psychological level, it is the desire for ontological security: a feeling or state of safety, protection, and agency in a world of threats and hazards.

B. If extreme disasters exist, the presence of extreme disaster resilience should be expected (and encouraged)

This dissertation focuses on large-scale catastrophes and preparation for such events at the household level. It shows that those who prepare at extreme levels – having the ability to survive for 31 days or more at home after a disaster – follow a defensible logic. At its base, it is a desire for ontological security: the security of being or self, a feeling or state of safety and agency in a world of real and perceived threats. The prologue illustrates multiple common themes regarding significant events that bear upon this: the cost in lives and physical damage, the effect of disaster knowledge, dissemination of this knowledge, that major catastrophes can occur even in developed countries, the benefits and limits of both household and government intervention, and that both are often naïve in the face of their risk levels.

What happened in Japan is known as a cascading event, one disaster that leads to another, in this case: earthquake → tsunami → nuclear accident. No single academic field dominates this issue. For example, one could study the physical forces at work: plate tectonics, geology, meteorology, astrophysics, or nuclear fission. Alternatively, one could look at monetary costs, bringing economics to bear. Large disasters are capable of knocking chunks out of a country's Gross Domestic Product (GDP). Small Island Economies can lose *more than a single year's GDP* in an event. Hurricane Gilbert struck St. Lucia in the Caribbean in 1988 with damage at 365% of their GDP. Cyclone Ofa hit Samoa in 1990 with a price tag of 178% of annual GDP (Kunreuther & Useem, 2010). Economists and natural scientists can also pair together to produce risk models to predict frequency, severity, and financial calculus.

Another lens could revolve around society, using tools from sociology or anthropology to discuss culture and community. Disaster brings a tragic human toll, and there are important issues of vulnerability, victimhood, inequality, gender, or race with a deep reserve of literature and discussion (Berke et al., 2015; Bolin & Kurtz, 2018; Cutter, 2017; Sikandar & Khan, 2019; Tierney, 2019; Turner et al., 2003). After a disaster strikes, disciplines such as criminology and law can provide insight. There are concerns of domestic violence in America (Schumacher et al., 2010) or sexual exploitation by aid agencies in Haiti or the Congo (Edwards, 2018; Flummerfelt & Peyton, 2020), elements that further add to the traumatization of survivors and our understanding of the impact of a disaster on people's lives. Governments, of course, can also be the source of disaster, with war, genocide, or persecution as embodiments of this scourge.

An additional avenue would be to look at politics, public administration, emergency management, or how governments intervene or fail to do so regarding disasters (Adger et al., 2016; Hannigan, 2012; Sherbinin et al., 2007).[2] For catastrophic events, this was often done historically in military channels focusing on civil defense or state survival, typically as a component of the Cold War (Tierney, 2019; Vale, 1987). For smaller and more modern-day occurrences, an example of the nexus of government mitigation and personal readiness comes from the Tokyo Metropolitan Government. That body produced an incredibly detailed but straightforward to use disaster manual in several languages and states explicitly, "there is a 70 percent possibility of an earthquake directly hitting Tokyo within the next 30 years. Are you

[2] Even the broad fields already mentioned still leaves out a host of others: public health, public communications, horticulture, food science, veterinary affairs, military affairs below nation-state warfare, history, and even film and television critiques.

prepared?"[3] But this manual only discusses low levels of preparedness, encompassing just a few days of supplies. This is not an anomaly. In looking through these copious examples from various research fields, there is an area with an *underwhelming* amount of study: extreme disaster preparedness at the individual or household level (Barker, 2019; Christian, 2017; Mills, 2019). Unfortunately, our knowledge of this opposite end of the spectrum – people who take active steps to survive, or even thrive, in the event of a cornucopia of potential disasters – is limited at best and misunderstood or even denigrated at worst.

The unifying theme throughout my work here is one of higher-level disaster preparedness and its underpinning logic. This dissertation takes cues from several disciplines but centers on a specific collection of people: those who prepare at comparatively high levels for disaster. What is their composition, their motivation, their shared characteristics, and where they diverge? I take inspiration from the examples of individuals such as Toshitaka Katada who challenged norms regarding disaster. To be prepared, even outside societal norms, and to act is to do good, to save lives. While some cultures and countries both internalize and externalize large-scale preparedness as both an individual and collective good, some do not. In America, for example, I am concerned with how these highly prepared individuals are often depicted by journalists, scholars, and average citizens. While I am deeply troubled by repugnant examples of certain malicious personnel who also prepare for larger disasters (or try to create them), I also take aim at writers who, through academic laziness or their own internal biases, attempt to bundle together actors inappropriately.[4] Therefore, this dissertation spends

[3] The English version can be found here: https://www.metro.tokyo.lg.jp/english/guide/bosai/index.html.
[4] Because of the politically charged nature of this subject in some circles, let me state unequivocally that I believe higher levels of resiliency should be supported and celebrated from the individual to the international level for all

a considerable amount of space refuting the improper categorization of some authors and bolstering the depictions and delineations of others. One clear example is race. As I discuss in Chapter Two, 25% of highly prepared individuals in the United States are *not* white alone, contrary to popular belief, and nine percent do not speak English as their primary language at home.

Again I wish to impart one resounding takeaway lesson to all readers: extreme preparedness is *logical*, not common, but logical. It may even be considered normal as certain states (e.g., Israel, Switzerland, Finland, and Australia) have cultural or legally mandated high levels of survival inculcated within their populace.[5] This is my main contribution to the field. A critical finding from my research indicates the practice of high-level prepping is far more extensive than is generally believed. I find a minimum of 11.4 million people in America in 2018 professed at least 31 days of preparedness; a number far more extensive than previous estimates. Two of the major gaps in so-called "prepper" research has been defining and then subsequently quantifying the phenomenon in a way that can be systematically tested or tracked. Furthermore, I argue extreme preparedness is explained by ontological security in the face of extraordinary hazard probabilities and possibilities. And, as disasters vary, so do preparedness levels. Therefore, my work explains both commonalities and cleavages among the highly prepared. Individual resilience is also related to the government. No state is omnipotent. The bureaucracy can provide warnings and some mitigation steps, but it cannot

people, regardless of gender, race, religion, or any other classification of people. Resilience is a private and public good for all comers.

[5] It could also be considered normal in a risk management sense of the word. This philosophy echoes – and could be considered an extension of – the writing of Lee Clarke (*supra*) who stated extreme disasters are normal.

halt every threat. People must take an active role in their own security. Therefore, extreme preparedness is also prudent. For example, the Hazards and Vulnerability Research Institute of at the University of South Carolina estimated in 2006 that 91% of all Americans lived in an area of moderate-to-high risk of at least one type of disaster such as an earthquake, tornado, volcano, or terrorist attack (Flynn, 2007). Given such a variety of catastrophes, risk factors, severity, and probability, it should come as no surprise that individuals match this variance, from the mundane to the existential. Chapter Three tackles this variety head-on in a way not attempted in nearly twenty years.

Whereas others have done in-depth ethnographies or similar work with small communities or participants, I cast a wider net and bring in statistical analysis and broader theorization. I take two primary sources as foundational: 1) two years of nationally representative surveys from the United States Federal Emergency Management Agency and 2) an over forty-year collection of qualitative studies, media articles, and research on highly prepared households and individuals. When combined, this is a work of understanding, at more of a macro level, on those who attain higher resilience levels. While they are usually referred to as survivalists or preppers, these labels carry primarily negative historical baggage. I reinterpret the term “resilient citizen” from one study on these individuals (Huddleston, 2016) to clarify and demystify their actions. I elucidate this term's formation in later chapters but introduce its full definition here. A resilient citizen is: *a private actor who has taken paired steps in advance, directly relating disaster risk to disaster preparedness, to increase their household resiliency to a level of 31 days or more and espouses no ideologically extremist views*. Like others before me (Bounds, 2020; Garrett, 2020b; Imel-Hartford, 2013; Sims, 2017), and

from my professional career as an officer in the United States Army with heavy deployment experience as well as involvement with catastrophe readiness exercises and planning, I see higher levels of disaster preparedness as something to be encouraged and view it as a logical extension of personalized risk management.

Overall, my work has one critical limitation; the data on these highly prepared individuals is almost exclusively derived from developed nations. Other than media stories and a smattering of non-representative academic works of high-net-worth individuals globally (e.g., Russian, Asian, or Middle East billionaires), the prepper phenomenon among average civilians are concentrated in developed nation locales.[6] And, within this subset, information on English-speaking countries, especially America, is predominant. Later in this dissertation, I theorize that extremely prepared households' rough contours can and do extend beyond this restriction. However, there is also a silver lining in this constraint. By and large, the data comes from wealthier nations where freedom is high for the population. These governments are also thought of as competent, and of all the countries in which I extract data, all have a robust disaster mitigation, preparedness, and response capacity. This is important as many preppers, even in such a context, see state failure or incompetence as a reason to prep at higher levels of resiliency.

A second limitation is that, due to COVID-19 travel restrictions and time constraints, I was unable to talk directly with preppers myself. To mitigate this, I cite heavily from those that have and amalgamate their work to show more of a collective whole. I have also spoken at

[6] In Chapter Three, I show how the activities of the very rich can be superimposed on some of the activities and plans of certain preppers.

length with several academics who specialize in this field and submitted drafts of my work for review and correction. A third limitation is that disaster is by no means a new topic. Pompeii, the Black Plague, Krakatoa, and wars throughout human history have shaped our existence on this planet. I limit my scope just to the last few decades and how modern people are readying for catastrophe, with one eye on the past and another on the present and future. A final limitation on this study is somewhat perversely a good one. 2020 saw an explosion of articles regarding COVID and disaster and a marked increase in academic interest and publication on the subject of preppers. The predominance of my research and writing was done during a 17-month stint between September 2019 and February 2021. While I have incorporated a decent amount of fresh information, I am certain there were many new stones left unturned and works that will undoubtedly surface between the end of my writing and its eventual publication.

Due to the wide audience this dissertation's findings can inform, I make the language and the statistical analysis broadly accessible with quantitative data not exceeding the level of means comparison or interpretation of basic ordinary least squares regression. Also, because of the topic's diversity, I include overviews in this introduction and in each of the main chapters below of the relevant research and debates so that readers specialized in one field may have the requisite information to follow my argument.

The rest of the introduction flows as follows. First, I introduce a few common terms regarding disasters. Next, I showcase the massive variance of threats and hazards those in the extremely prepared crowd attempt to mitigate. This section also highlights a common finding among this literature that a key variable is the government, often seen negatively by citizens.

Finally, I conclude with a chapter summary. While Chapters Two, Three, and Four were written as independent pieces, a rough proficiency in the seminal base aspects enriches the discussion.

C. A short primer on disaster terminology[7]

Defining or categorizing elements relating to disaster cuts across multiple dimensions. Definitions involve markers such as scope, impact, altering standard patterns of life, the area affected, the response effort required, and others. The American Red Cross reports that they respond to over 60,000 disasters in any given year, upwards of 93% of which are isolated house fires (American Red Cross, n.d., 2018). Other disaster specialists, however, would categorize this as examples of emergencies, not disasters. According to Quarantelli, the Disaster Research Center's founding director at the University of Delaware, emergencies are small scale, often individual events, but could involve several dozen or even hundreds of people, such as an airline crash. Disasters, by comparison, are far more extensive, often affecting multiple sub-national jurisdictions with examples including large-scale flooding or most wildfires. Catastrophes are larger still; there is massive damage and the central government or even international entities take part in recovery or reconstruction efforts (Quarantelli, 2006; Tierney, 2019). COVID-19 is a catastrophe via this framework.

Belgium's International Disaster Database EM-DAT codes something a disaster if it meets at least one of the following four criteria: 10 or more people dead, 100 or more people affected, the declaration of a state of emergency, or a call for international assistance (Centre for Research on the Epidemiology of Disasters (CRED), 2019). Other buzzwords and

[7] The glossary provides a synopsis of common terms.

catchphrases abound. The United States government includes terms and definitions such as "catastrophic incident," "national security emergency" (Department of Homeland Security, 2019), "incident," "catastrophic event," "complex catastrophe," and "major disaster" (Department of the Army, 2019) and implements them via Executive Orders, legislation, and practice. Numerous other analog descriptions exist (McFarlane & Norris, 2006), some of which incorporate crime (Wallace, 2020).

However, the current international gold standard is the Sendai Framework as promulgated by the United Nations Office for Disaster Risk Reduction (UNDRR). According to them, the terms disaster and emergency are transposable (United Nations Office for Disaster Risk Reduction, 2015). For the purposes of this writing, I share their ecumenical use. So, disaster, catastrophe, calamity, and nearly all other synonyms, unless expressly noted, are used interchangeably. As will be shown below, this broad application is justified as those who engage in high-level disaster preparedness often do so in an attempt to countermand a plethora of threats. This can occur even among those people who live in the same city. New York City preppers readied themselves for various catastrophes because that city had been subject to events as diverse as terrorism, Hurricane Sandy, flooding, economic shocks, and infectious diseases even before COVID (Bounds, 2021). "For these New Yorkers, prepping is a reality-based exercise rather than one driven by fantasy" (Ibid).

Almost as debated is the word resilience. There are engineering, emotional, ecological, and socio-ecological definitions, which describe resiliency in terms of "bouncing back" or "adaptive capacity" (Comfort et al., 2010). The Sendai Framework states resiliency is:

> "The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient

> manner, including through the preservation and restoration of its essential basic structures and functions."

In my work I adopt this definition and add only "individual or household" to the list of entities to which it pertains. For statistical and theoretical purposes, to be expounded upon later, I also codify a temporal aspect to resiliency: the number of days one can survive at home after a disaster without publicly provided power, water, or transportation. Furthermore, the UNDRR defines preparedness as:

> "The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters."[8]

Preparedness is similar to readiness and the terms infer both a proactive stance (something done well in advance of an event) and a probability component. Just like disaster though, these words are not detached or distinct by preppers, but rather coalesce.

Chapter Four delves into other important terms regarding disaster and specific models indicating how the concepts relate to each other. Suffice to say here that increased resilience, preparedness, or readiness – all congruous in my usage – can provide an increased buffer to disasters. Therefore, preppers raise their levels based on the historical reality or future fear of larger disasters. With terms understood, what kinds of disasters are people such as resilient citizens concerned about and what is the relationship to the government?

[8] https://www.undrr.org/terminology/preparedness.

D. Future fears, historical examples

Damian Brindle is a prepper, a self-proclaimed "survival enthusiast" (Brindle, 2020). He has published 16 short books on personal security to survive to disaster preparedness, including works such as "53 Essential Bug Out Bag Supplies" to "Prepping Strategies for Condos, Apartments, and Duplex Living." His book "9.0 Cascadia Earthquake Survival: How to Survive the Coming Megathrust Quake That Will Devastate the Pacific Northwest," while sensationalist, is grounded in truth. The Cascadia Subduction Zone off the coast of Canada and America is of concern to scientists and disaster experts. Brindle cites former FEMA Region X director Kenneth Murphy whose "operating assumption is that everything west of Interstate 5 will be toast" in the event of a megaquake. The 2013 Oregon Resilience Plan,[9] a report to the 77th Legislative Assembly and written by the Oregon Seismic Safety Policy Advisory Commission, also portends a gloomy outlook. It assumes between 1000-10,000 casualties and tens of thousands of damaged buildings in Oregon alone from a 9.0 quake and tsunami.[10] Recovery costs are estimated to be 20% of Oregon's GDP. Inland restorations to electricity, drinking water and healthcare are measured in months, coastal repairs in years. The commission emphatically states: "Citizens, too, need to plan to be self-sufficient for far longer than the 72 hours commonly advised for disaster preparedness" (Oregon Seismic Safety Policy & Advisory Commission, 2013). The impetus to create the report was, not surprisingly, the 2011 9.0 Tohoku earthquake of Japan. Due to such scenarios, Brindle, like other prepper authors, recommends one month or more of at-home preparedness.

[9] Also cited by Brindle.
[10] Other disaster planning events along the US west coast have utilized a 9.0 earthquake, see (Freitag et al., 2014).

Disasters certainly capture the public's attention. For 2019, the year before COVID was a household name, Chartbeat analyzed the world's online reading habits and discovered tragedies featured prominently in the top ten stories (The Economist, 2019). One researcher found that media consumption of disasters was a critical variable positively associated with high-level preparedness (Mills, 2019). Preppers and survivalists often point to the historical record or modern trends to predict potential upcoming events, ranging from the moderately disruptive (e.g., a winter blizzard that cancels school and drops temperatures below zero) to the cataclysmic, such as crushing national debt levels and hyperinflation. They typically focus on events that have already occurred and could therefore happen again with or without warning. As one New York City prepper stated: "We are not crazy people. People need to understand that we are not preparing for doomsday and the end of the world. *We are prepping for tomorrow. Tomorrow*" (Bounds, 2021) (emphasis in original). Several sources consider personal experience with disasters, to include crime, to be a driving force for individuals, not just preppers, to get ready (US Federal Emergency Management Agency, 2020; Wallace, 2020).

Catastrophes can be categorized in three broad ways: natural, technological (accidents), and manmade (everything from war to economic shocks).[11] In what should now resound as a drumbeat, these can overlap and cascade upon each other. They can be individual or collective and exist in the full spread of chronological occurrence from acute to chronic (McFarlane &

[11] This is a gendered term, but replacements such as "human induced" have a host of their own issues. For example, Tierney (supra) and others firmly believe "the root causes of disaster are to be found in the social order itself . . . including the global political economy" and "actions undertaken by state actors for their own purpose that ignore and increase hazards and risks, processes that contribute to social vulnerability by further marginalizing disadvantaged social groups" (p. 12).

Norris, 2006).[12] FEMA, while it prepares for a host of challenges, has only 15 specified National Planning Scenarios. These plans ready for a mixture of natural, technological, and manmade disasters, several of which would require months of response and recovery – like, for example, a pandemic.

Natural disasters, or "acts of God" as they are often referred to as in legal and insurance circles, are the easiest to relate to. Certain areas are more subject to specified disasters than others and this can impact how people view preparedness. 2020 brought a new term into the American disaster lexicon: gigafire. The August Complex fire in California burned over one million acres, a landmass the size of Rhode Island (Milman & Ho, 2020). Yet this event pales in comparison to Australian episodes. The collection of 2019-2020 "Black Summer" fires burned 46 million acres, an area of devastation larger than the country of South Korea (Garrett, 2020a).[13] Garrett found fire figures prominently in the minds of Australian preppers.

Other elements are no less destructive. One of Californian history's worst events was the flood of 1861-1862 which left portions of Central Valley under 30-feet of water. The ARKStorm simulation predicts events such as this will occur every 100-200 years with a price tag of $1 trillion dollars (Jones, 2018). Even an earthquake as small as 6.5 in the Sacramento-San Joaquin River Delta could destroy 600 miles of levees, wiping out nearly half of America's fruits and vegetables harvest and take over a year to repair (Flynn, 2007). The Dutch have been

[12] Disaster databases rarely contain all three, so the issue of counting disasters to use as an independent variable is a challenge, even in the United States where data is abundant. For example, EM-DAT only tracks natural and technological disasters. The Spatial Hazard Events and Losses Database for the United States (SHELDUS) run by Arizona State University tracks only natural disasters. FEMA's Disaster Declarations Summary data visualization website has some, but not all, technological or manmade events. Presidential disaster declarations are problematic as well.

[13] And also https://en.wikipedia.org/wiki/List_of_major_bushfires_in_Australia.

fighting back the sea for centuries, and as the prologue cataloged, Japan fears earth and water as well.

Death from the skies and wind is also ubiquitous. 2019 was an anomalous year for tornados in the United States. 500 tornados struck in a 30-day period with a reported 12 consecutive days "of eight or more tornadoes" (Sullivan, 2019). Hurricanes, cyclones and other airborne natural events historically include pathogenic and zoonotic outbreaks such as hantavirus, salmonella, Ebola, and of course, COVID-19.

The German reinsurer Munich Re estimated for 2020 that natural disasters alone, sans COVID-19, cost the world $210 billion (Newburger, 2021). Yet this is a drop in the bucket as compared to the $10-30 trillion range estimates for COVID's fiscal devastation as provided by World Bank numbers (The Economist, 2021) or the International Monetary Fund (Elliott, 2020), respectively. Data from the Bank of England found that 2020 was the United Kingdom's largest GDP plunge since 1709 (Durden, 2021c). Expert testimony before the United Nations in December of 2020 indicated an additional 270 million people worldwide were now under the threat of starvation.[14]

Technological disasters are common as well. While no lives were lost, the greatest environmental catastrophe in modern Spanish and Portuguese history occurred when the *Prestige* oil tanker burst in 2002, wrecking local beaches and commercial fishing operations. An echo was the Deepwater Horizon spill in the Gulf of Mexico. The shadow of Chernobyl still lingers in discussions of atomic energy in Europe. Thirty years later, Norway has reindeer that register raised radioactivity levels (Lewis, 2016). North America's biggest blackout occurred in

[14] https://www.un.org/press/en/2020/ga12294.doc.htm.

2003 when trees fouled up three high voltage lines. 50 million Canadians and Americans were without power and cost estimates were at $6-10 billion (Flynn, 2007). Pacific Gas and Electric, a California power company, recently filed for bankruptcy. Costs for lawsuits and expenditures related to numerous fires caused by a mix of high winds and its infrastructure (Wichter, 2019) brought the company down. One was the Camp Fire which obliterated the town of Paradise. It was the most expensive disaster in the world for 2018 and killed over 80 people (Reyes-Velarde, 2019; Rice, 2019).

And finally, there are manmade disasters. Here the dividing line is not as clear cut. War, genocide, and the 9/11 terror attacks are considered manmade disasters as is the 2013 Boston Marathon bombing. So are persecutions and killings against the Yezidi's in Iraq by ISIS, Rohingya's by Myanmar, or Uighur Muslims in China. But violent crimes including mass shootings or murders are not depicted as manmade disasters. Fortunately, the distinction and categorizations are irrelevant. These events still cause fear, often of the central government or of other people. Black Lives Matter protests and defund the police movements may have contributed to the fact that 2020 saw the largest spike of murders in United States history (MacDonald, 2021). With COVID as a potential contributing factor, 2020 also witnessed the highest ever recorded purchasing of firearms, with January 2021 marking the largest month ever at 4.1 million guns sold (McIntyre, 2021). One estimate puts the number of liberal gun owners at 20% (Niccum, 2021), which complicates any depiction of weapons possession as an exclusively right-wing phenomenon.

Affronts to freedom and an overall dread regarding government seems to be increasing. Hong Kong has been all but subsumed into China. The "one country, two systems" principle is

being erased. German courts have repeatedly overruled the country's illegal lockdown edicts and *Die Welt* found "the Interior Ministry hired scientists from the Robert Koch Institute and several universities to justify the country's strict lockdown measures**"** (Durden, 2021b). That country had discussed putting quarantine breakers in detention centers (Brown, 2021). In the US, a Democrat official suggested putting Trump voters in re-education camps (Laila, 2020) and a Public Broadcasting System lawyer opined taking the children of Republicans for the same purposes (Wulfsohn, 2021). Several academics warn that COVID is pushing democracies closer to authoritarianism with mandatory surveillance and other tactics that are massive denials of basic human rights (Greitens, 2020; Thomson & Ip, 2020). American's anxiety of their own government existed even pre-COIVD and is rising. Over three-quarters of Americans state their greatest fear is "corrupt government officials" at 77.2% in 2019. The government has been the top fear *for four years in a row*, rising 17% over that period and is 10-20% higher than the next greatest worry (Sheth, 2019). The connection of government and disaster can also be viewed as one of neglect. As Professor Anna Bounds said: "The stereotype of preppers is that they're paranoid and think that the government is coming for them . . . Whereas people in the city, preppers of color, prepare because they think that government isn't coming for them" (Yuhas, 2020).

As a final manmade disaster fear, there is a concern of economic shocks or even an implosion of the system. The world has seen three major economic hits in the past twenty years (the Dotcom bust, the 2007/8 Great Financial Crisis, and the current COVID crisis). Bitcoin (during the period of this writing) was worth over $50,000. Premiums for physical gold and silver are several percentage points larger than their typical spread. Long-time investing gurus

such as Stanley Druckenmiller are sounding the alarm. In a recent interview, he noted in **"**three months in 2020 we increased the deficit more than the past five recessions combined," and the "Fed in six weeks bought more treasuries than in ten years under Bernanke/Yellen" (Durden, 2021a)**.** Given this background, I now turn to the construct of the main chapters.

E. Chapter Overview

Chapter Two dives headlong into the topic of preppers and offers my initial defense and description of the term resilient citizen. Over the past 20 years, and especially the COVID-19 pandemic, several events have brought the topic of prepping (stockpiling goods and/or skills for extreme hazards) back to the forefront of public awareness and scholarly inquiry. However, in the 40 years of study, two of the most fundamental issues in this research remain unresolved. First, how many preppers are there? And relatedly, what makes someone a prepper? I tackle both of these issues. Due to the lack of quantification, nearly all data is qualitative in nature and has acquired a polarizing tinge with the dominant description of this group closer to caricature than fact. Challenger perspectives to this portrayal, while well-grounded, still suffer from selection bias. This chapter contributes to the argument; it utilizes two new national large-N surveys of Americans from the Federal Emergency Management Agency. I reinterpret a term from the literature, resilient citizen, but for the first time make it a testable and calculable definition to offer for the genre. In doing so, I establish a baseline for the number of extremely prepared individuals in the United States at 11.4 million people. I provide descriptive statistics of this group to argue that resilient citizens are closer to average Americans in many respects and are more accurately portrayed by the opposing minority viewpoint.

Chapter Three is my theoretical contribution to the field of prepping. As will be shown, the study of preppers is undertheorized in the literature. No one thesis comprehensively accounts for a) the full diversity of individual preparedness, b) a mechanism to tie threats to action, c) one that connects both to those who brace for disaster at lower levels of readiness, and d) excludes those with extremist ties. This leads to confusion, stereotyping, and conflation of terminology. To help solve this, I first argue ontological security theory offers a key piece to help disentangle the problems and puzzles of the prepper genre. It weaves in with the logic of time probability. Second, I provide a rich overview of the divided historical and recent scholarship to show the problem's size and perform an initial test of this theory's applicability. Third, I expound further and utilize three criteria to delineate modern groups and interpret the heterogeneity seen: 1) days of preparedness, 2) ontological security actions, and 3) an extremist ideology exclusion criterion taken from the United States military. While this chapter concentrates primarily on the second metric, I employ all three to explain five heuristic species of resilient citizens: Homesteaders, The Faithful, Sentinels, The Interdependent, and Noahs. Although I primarily utilize American examples, these sub-types can have international cases.

Chapter Four is an empirical implication piece of my main thesis. I analyze FEMA data regarding preparedness rates between island residents and their mainland counterparts. Against predicted outcomes, residents in American island states and territories are more likely to be prepared for disaster; anywhere from 40-135%, depending on the type of event. Island residents face scales of disaster that are often catastrophic for a far greater percentage of the populace than inhabitants in continentally based locales and some mitigation efforts for disasters such as hurricanes make one *more* vulnerable to deadly earthquakes. What explains

the extended self-sufficiency levels if the chance of death or personal property destruction is greater? The answer is the desire for survival, again, time probability logic. For a baseline, I compare two theories, one from the United States Federal Emergency Management Agency and one developed by risk and disaster researchers Robert Meyer and Howard Kunreuther. Results indicate that while both models have some explanatory power into preparedness efforts, neither contains a physical isolation and impact variable. To attempt a remedy, I take an inference from disaster and prepper literature regarding state failure and conduct a plausibility probe. I theorize that island residents vulnerability, caused by geographic realities and their real or perceived exposure to hazards that are concomitant with state failure, triggers action to increase resiliency via shelter-in-place mitigation actions. This chapter is primarily concerned, not with preppers, but with people as they interact with their existential realities and the connection to state mitigation and response efforts.

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CHAPTER TWO

The Noah Virus: Who is Infected with High Resiliency for Disaster?

I. Introduction

As the current COVID-19 epidemic continues to deeply affect the world, researchers attempt to catalogue and explain the disease's impact and offer descriptive statistics on victims, survivors, and the deceased. Race, age, comorbidities, and national totals are examples. The various vaccines' long-term side effects and efficacy against new strains will likewise be studied in analogous fashion. These facts offer a window into risk and vulnerability and even issues of transparency, political power, and national security. Related research topics are government lockdowns, citizens' foodbank use, debts (both public and private), as well as unemployment rates. Yet a pandemic is just one type of disaster. There are still ongoing natural catastrophes like floods, earthquakes, and hurricanes as well as manmade threats – both potential and realized – such as severe economic contraction, nuclear worries, violent riots, and fears of armed conflict.

Yet there is also a subset of individuals, commonly referred to today as preppers, who take steps prior to these events to increase their resilience to the shocks previously described as well as a host of others. These individuals stockpile supplies and often skills for catastrophes far above official recommendations. But with over 40 years of research, the two most basic questions have yet to be adequately answered: 1) just how many are there, and 2) what makes someone a prepper? For the former, estimates vary wildly and range from three to 160 million in the United States alone; however, the methodologies utilized to attain these results are highly suspect. This divergence is due to the theoretical inadequacies of the latter question. Before you can tally, you must define your unit of analysis in such a fashion that observations or cases can be readily distinguished and falsifiable. This chapter answers both questions.

How many people go to extreme levels of preparedness and how widespread is the phenomenon? What do "they" look like as compared to the rest of America? The dominant portrayal of these preppers and their related forbearers, survivalists, is overwhelmingly negative. While this depiction has been opposed since the beginning, only recently has the contrasting view been considered an adequate challenger. I introduce the literature in this chapter regarding preppers and survivalists with enough for the reader to see the divide between the Dominant and Challenger camps.[15] This chapter is an improvement of the debate, primarily a quantitative enhancement. Based on my research here, the results heavily favor the Challenger depiction of preppers. I back this claim up with a nationally representative empirical analysis on data from the United States that has never been done before.

To accomplish this, what is needed is both a defensible definition of extreme preparedness and then a random sampling of a population to ascertain – to stick with the metaphor – the rate of infection. If prepping is logical and confers an advantage, some observational implications are that its occurrence should be spreading beyond small micro-niches and an increase in positive commentary on the practice itself. I take an initial step in answering the two fundamental questions listed above of what are, and how many preppers are there. To do so, I reinterpret a term used by Chad Huddleston, that of resilient citizen; a classification that subsumes many preppers underneath it. Using data from the 2017 and 2018 National Household Surveys from the Federal Emergency Management Agency (FEMA), I argue that there are approximately 11.4 million resilient citizens in the US and that these individuals, demographically speaking, are far closer to everyday Americans than they are typically

[15] I offer a far longer background in Chapter Four.

portrayed. A resilient citizen, initially defined in this chapter, is a private actor who can survive for 31 or more days at home without power, water, or transportation.

A. The politics of prepping

"You will never fully convince someone that he is wrong; only reality can do that."
Nassim Taleb[16]

"Prepper" is a relatively young appellation. Using a simple Google Ngram search, the term was hardly mentioned prior to 2008. Before this, the moniker associated most closely with the actions identified today as prepping was survivalist. Survivalist began a rapid accent in book mentions in the late 1970s, popularized by the writings of Kurt Saxon in 1976 (Saxon, 1980) and still receives approximately four times as many references as prepper.[17] Saxon noted some of the earliest negative media portrayals stating: "Do not be surprised when you see Survivalists portrayed as idiots and fear-crazed kooks" (Saxon, 1980). This period in time (roughly 1976-1984) demarks where nearly all future discussion of survivalists – and then 20 to 30-years later, preppers – split. The overwhelming majority of writing from 1984 and onward focused on extremely prepared individuals or groups who were simultaneously extremists. These individuals were described as white nationalists, cultists, or psychologically unbalanced (Coates, 1987; Gonowon, 2011; Lamy, 1996). Lost or downplayed for decades were the common origins and depictions of overwhelmingly non-extremist individuals. They did not make for much shock value.

[16] (Taleb 2018).
[17] https://books.google.com/ngrams/graph?corpus=26&content=prepper%2C+survivalist&smoothing=3&year_start=1800&year_end=2019&direct_url=t1%3B%2Cprepper%3B%2Cc0%3B.t1%3B%2Csurvivalist%3B%2Cc0#t1%3B%2Cprepper%3B%2Cc0%3B.t1%3B%2Csurvivalist%3B%2Cc0.

Broadly speaking, prepping – a verb – is the act of readying oneself or one's family, via means of supplies, tools, plans, and skills, for a potential (often severe) future hazard, either natural or manmade. It can be the common or heightened form of the 3-day to two-week emergency readiness encouraged by FEMA or the American Red Cross, respectively. Other countries have guidelines tailored to their populace. While there is no checklist or base requirements, preppers – a noun – are those who undertake these extended steps, in many forms, often to radical levels such as building bunkers; purchasing large quantities of firearms, precious metals, or foodstuffs; and learning medical skills beyond first aid. There is no agreed upon definition, taxonomy, typology, or classification of preppers, which confounds study, but the legacy connection to survivalist and all that word's negative connotation is strong. Many preppers today do not like, nor use the term to describe themselves; a fact which further muddies the waters.

The massive global shock of the COVID-19 pandemic is radically changing modern perceptions. Positive, glowing, respectful, and even humble articles of apology have become more common in media circles since the crisis hit. *The Daily Beast* asks "If You're Not a Prepper Already, What Are You Waiting For?" (Matloff, 2020).[18] Ben Hansen is the "chief of media for PrepperCon" and has tried to demystify and normalize the term: "If you carry a spare tire in your car, you're a prepper. If you have a first aid kit, you're a prepper" (Yuhas, 2020) And, not to be outdone, *The New Republic* declares "We're All Preppers Now" (Horn, 2020). It seems everybody is a prepper these days.

[18] This trend is not confined even to the US as many Europeans are embracing the mindset, at least temporarily (Reynolds 2020).

Nellie Bowles of *The New York Times* praises the "Silicon Valley Prepper" stating "they feel vindicated. Because they are. The coders and founders long snickered at for stockpiling flour and toilet paper were absolutely right" (Bowles, 2020). Although rather than gloating, or even engaging in a bit of schadenfreude, many of these much-maligned individuals are doing what they've been doing for the past few decades: helping others and providing advice to all who will listen. Their guidance is offered on their websites and via interviews with journalists and others (Arends, 2020; Centers, 2020). Few, if any, are "cheering" the global pandemic (Seewer, 2020).

The Atlantic featured prepper researcher Bradley Garrett who admitted his "cheeks reddened" when thinking about some of the "skeptical questions" he had asked one highly prepared individual just a couple of years earlier (Garrett, 2020b). He now encourages others to prepare for these "extreme" events. Yet even when praising their foresight, the journalistic veil still slips to offer small jabs. When discussing the Vivos hardened bunker location in rural Indiana, one author states condescendingly, "the chief appeal of [the location] seems to be that no one would ever think to drop a nuclear bomb anywhere near them" (Horn, 2020). Several articles referred to preppers – past tense of course – as "fringe" (Horn, 2020), "occasionally mocked" (Yuhas, 2020), "conspiracy theorists" (Arends, 2020) who suffered "ridicule about bunkers and tin-foil hats" (Conroy, 2020). Comments like this are omnipresent in media articles and peer-reviewed academic submissions and have been for decades. This reveals that there is clearly an overriding attitude and opinion regarding preppers and it has not been benevolent. What changed?

For over forty years the primary divide in coverage on survivalists or preppers split into two groups. On the dominant side of the debate, in a sort of one-size-fits-all paradigm, extremely prepared individuals have been shoehorned – sometimes very deservedly – into caricatures that are then offered up as typical of the collective whole. For example, President Barack Obama was seen by some as "expediting the arrival of the Islamic Antichrist" (Murphy, 2013). Much of this has to do with popular media portrayals which are then taken as fully representative typecasts and inserted into professional literature. The National Geographic show *Doomsday Preppers* and American Movie Classic's *The Walking Dead* were the biggest recent examples – although by no means the only ones – of the prevailing decades-long zeitgeist and are cited and studied nearly ad nauseum. Other caustic depictions include charges of racism, homophobia, sexism, "wounded" masculinity, or begin with a sordid (and highly selective) connection to seditious militias or cults (Christian, 2017; Coates, 1987; Foster, 2016; Kabel & Chmidling, 2014; Kelly, 2016).

For many, preppers at worst were heavily armed anti-government Timothy McVeigh doppelgangers or Aryan Nations white supremacists (Lamy, 1996) getting ready for the Racial Holy War. At best they were clearly delusional far-right reactionaries who slavishly listened to Glenn Beck and Sean Hannity (Murphy, 2013). This coverage slanted opinion of preppers to the negative. It is an example of what Daniel Kahneman called What You See Is All There Is (WYSIATI) (Kahneman, 2011). To summarize the popular depiction, preppers are: white, racist, homophobic, Islamophobic, poorly educated, far-right, rural, gun owning, anti-government zealots who openly cheer for TEOTWAWKI (The End Of The World As We Know It). Preppers by

this standard became another victim of the culture wars: rural versus urban, black versus white, Republican versus Democrat.

These (mis)representations of preppers have come under challenge by multiple scholars and writers since 1980 but this alternative view has only started to gain traction within the past decade. Representatives of these challengers – and two of the more prominent of the voices – have been Chad Huddleston (an American anthropologist) and Michael Mills (a British criminologist). Huddleston's ethnographic embedding in a prominent prepper group showcased a far different opinion of mainstream preppers. These weren't crazies or racists, they were rational actors preparing not just for global catastrophes, but for local tornados and floods and were heavily invested in their neighbors and neighborhoods (Huddleston, 2016). Mills ethnography echoed a similar refrain, while mostly conservative politics were part of the composition of his preppers, they were really driven by precautionary principles, anxiety, and media consumption of disasters (Mills, 2019b). Still, even in the best light, preppers were on the margins of normality.

A compounding problem is that many preppers, regardless of race, gender, income, or political affiliation, hate the imputation of prepper = survivalist = racist/kook/fringe. Another hurdle is secrecy. A common trait of preppers is that many of them practice OPSEC, which is a military term that stands for Operational Security. Basically, if you are a prepper, don't talk about it. This privacy is due both to the stigma of the words and to prevent becoming a target if you broadcast to the world that you have stocks of supplies in the event of an actual large-scale disaster. The overall impact of a lack of research, the type of research performed, and an understandable hesitancy of "average" preppers to talk about their prepping leaves an

academic hole to be filled. While previous research is assistive, it often lacks quantitative facts and data for use in wider extrapolation for a measure of the popularity of the phenomenon.

But COVID-19 has once again mainstreamed discussion of this topic, if only for the current crisis. In this chapter (and in the dissertation as a whole) I argue that extreme prepping is far more ecumenical than previously known and is not relegated only to one "type" of person. This leads to a singular hypothesis for this chapter.

***Hypothesis**: Resilient citizens are generally as diverse as the composition of America regarding gender, race, education, income, urban-rural residency, and political party.*

I seek to show that the professional understanding of prepping has generally been hampered by a lack of rigorous and non-biased data collection and is practiced by a far larger swath then current academia has yet fully grappled with. It shatters many of the quasi-myths currently circulating. On what dimensions are preppers representative of the greater American population and where do they diverge? This chapter provides hard evidence to answer some, but not all, of the descriptive questions regarding those who prepare at these higher levels.

Perhaps in a year or two, preppers will go back to being considered ridiculed outliers, for now its radioactive water under the bridge. But Jason Charles, leader of New York City Preppers Network and an African-American, is not optimistic: "As soon as this [COVID] passes, we'll be the stupid people preparing again" (Yuhas, 2020).

B. Gaps, contribution, and overview

"The preppers we encounter in popular culture are invariably the worst examples - religious or political zealots, eccentrics, middle-aged men suffering crises of masculinity, and, in the case of shows such as Doomsday Preppers, caricatures selected for entertainment value."
(Conroy, 2020)

There is a common refrain among researchers on preppers that the literature is "thin" or "surprisingly understudied" (Barker, 2019; Mills, 2019b). These comments are true in two ways. First, the actual number of scholarly articles is notably low. Most literature reviews commonly reference a corpus of works of roughly 20 sources or less, many of whose units of analysis center around white, non-liberal males (although even this is changing, see for example (Bounds, 2020)). The second is the type of research. With rare exception, unless the author is specifically referencing household preparedness studies, the methodologies common to almost all are qualitative in nature. Ethnographies lead the pack, followed by a smattering of netnography, film and television review, journalism, and overall commentary. And, as the ethnographers have noted (Barker, 2019; Garrett, 2020a; Mills, 2019b), some of the more highly cited pieces (e.g. Foster 2016, Christian 2017, Kelly 2016) have never even spoke with actual preppers. Much of the remaining prepper "canon" pieces are short articles in media outlets such as *The New York Times, Newsweek*, or *Mother Jones*.

Utilizing data from the Federal Emergency Management Agency (FEMA), I address the issue of the lack of quantitative methodology. In doing so, in no way do I dismiss the work of the qualitative scholars. This dissertation is meant to enhance, question, and refute where necessary. Unfortunately, the largest problems with the qualitative research are the issue of selection on the dependent variable and small sample sizes. Recent ethnographic studies involved a low of just four individuals and a high of 39. Participants were often discovered via

prepper websites or at conventions and commonly the snowball method of sampling was incorporated. This lack of randomization leads to studies of clusters, not breadth of the entire group. The FEMA data allows one to cut through the selection bias that typifies almost all prepper examination as the two surveys are large-N and, generally speaking, randomized.

Going forward, the chapter proceeds as follows. First, in Part II, I cover previous endeavors to delineate and count the numbers of extremely prepared individuals. The paucity and questionability of most previous calculations speaks volumes. In Part III, I introduce my methodology and the FEMA datasets. Next, I describe my reinterpreted codification of the term resilient citizen, with two additional variations of the theme, and then provide the descriptive statistics of these groups as compared to regulars. In the introduction, I stated there was a popular primary view of the composition of preppers with some opposing opinions. Therefore, for ease of discussion I deem these two positions the Dominants and the Challengers. While there is still much work to be done on the theory and classification of the word's prepper and resilient citizen, this statistical piece is a necessary precursor.

II. How many preppers are there and what are they like? Historical attempts.

"In addition, scholarship can be contradictory to prepper self-identity. The scholarly literature on survivalists and preppers has a noted bias against those who participate in these activities as being fearful of the world around them, fearful of the government and politics, right-wing racists, or religious kooks. Although the survivalist right is an undeniable part of the movement, they are an unrepresentative extreme. With self-sufficiency being the main unifying factor among preppers, it is impossible to class them as having a specific agenda of any type: political, religious, or social" (Lindsay, 2015).

Most definitions of preppers and survivalists revolve around a single concept: a looming large disaster or threat and then either personal skills or provisions (or both) to counter or

mitigate that risk. For example, one of the oldest definitions comes from Saxon who states: "My definition of a Survivalist is a self-reliant person who trusts himself and his abilities more than he trusts the Establishment. Insofar as the Establishment is deteriorating, the Survivalist prepares to leave it" (Saxon, 1980). Similarly, Mills gives a longer temporality to prepping that is more extreme than having a few boxes of Pop Tarts and extra batteries for your flashlight. Prepping is for larger catastrophes.

> "Prepping is thus distinct from ordinary short-term preparedness for hurricanes and other natural emergencies, being distinguished by its application towards manmade disasters as well as natural ones; medium- to long-term survival lasting weeks, months, or even years; and violent social breakdown amidst collapse" (Mills, 2019a).

This connection to TEOTWAWKI harkens all the way back to the oldest known use of the word from 1904 by Jennifer Emory: "I consider myself something of a prepper. I don't necessarily believe there is an apocalypse coming anytime soon. However, there are certain items I always keep on hand just in case."[19] But this is where agreement ends. Mills, Huddleston and others (Imel-Hartford, 2013) say the two terms, survivalist and prepper, are distinct, but dissenting voices say they are the same or cover a broad spectrum (Arends, 2020; Gonowon, 2011; Mitchell, 2002). Some, like Cody Lundin, take a middle ground and see preppers as "survivalist-lite" practitioners *lacking* in multiple skills necessary (Bennett, 2009). But Jim and Susan Smith, who have a 60-acre farm and are chalk full of survival abilities, are also referred to as survivalist-lite (Martin, 2000). And thus, one is stuck on the issue of classification,

[19] https://www.merriam-webster.com/dictionary/prepper#h1

quantification, and falsifiability. With definitions in the eye of the beholder, one can only expect counts of preppers to be all over the map. And that is exactly what is seen.

On the higher end of calculations, one data point for the number of preppers that exist in America was conducted by the financial company *Finder*.[20] Their 2017 survey of 2,000 individuals indicated that, via extrapolation, 160 million doomsday preppers walked among us (with numbers dropping to 141 million in a follow-on survey in January 2020 (n = 2398)) (Laycock, 2020). From the 2020 survey, 20% of Americans had purchased survival supplies in the past year. Broken down, 10% of respondents indicated they kept supplies due to concerns of natural disasters, another 5% because of political concerns and the final 5% worried about both (Ibid). Finder proclaimed another 35% of Americans would not need to go shopping in the event of a disaster since they always had "survival items on hand in case of emergency." This led the site to proclaim, "roughly 55% of American adults (141 million adults) . . . are prepping for the end times".

Except that is not what their data shows at all. Looking through the charts, there is no indication of duration of preps. In fact, by the survey's own statistics, the amount of money spent in the past 12 months on survival kits was a paltry $105.53. And while Laycock indicated another ~$6-7,000 was dedicated, on average, to emergencies, this money was in categories such as "emergency savings, home renovations, insurance" and "means of evacuation" (i.e., car or boat). That is, if you had a car payment or paid homeowner's insurance, they counted that as prepper spending. Worse still, these financial numbers excluded, by design, "the 74.90% of participants who selected that they do not spend on emergency/survival preparation and the

[20] This article is cited by (B. Garrett 2020b).

11.86% who responded '$0' for amount spent on home renovation." So, other than the fact that 87% of respondents were omitted from the dollar tallies and of those that were included only an average of $100 were spent on actual survival items, one is led to conclude that 140-160 million Americans are locked and loaded for Armageddon? These are not trustworthy numbers. Being exceptionally generous, this data only indicates common levels of "normal" household preparedness for the occasional – temporary – power outage. And, if anything, shows as staggering lack of preparedness in the US populace.

On the low side of estimates is that by Jon C. Ogg.[21] His report was for the online financial site *24/7 Wall Street* and indicated there were 3.7 million preppers (Ogg, 2013).[22] Yet Ogg lists no methodology or source for how he arrived at that number. Kelly (2016) cites a figure of three million from Eells, but Eells (*Men's Journal*) gives no source (Eells, 2013). Mills (2019b) cites Lawson (*brides.com*) who puts the number at five million.[23] James Stevens – aka Doctor Prepper – stated in 2013 that the prepper market was about four million people (Murphy, 2013), but again with no testable or traceable backup to the claim. Lamy noted that in the 1980s, survivalism was a billion-dollar business, but offered no guess as to the number of practitioners.

The range of preppers – by these sources given – in the United States is then three million to 160 million depending upon the year the study was conducted and the methodology. Though as noted, none of these works passes much of a scholastic sniff test. Either the

[21] Cited by (Mills 2019b) and (Aldousari 2015).
[22] Of note, he updated this posting in March of 2020.
[23] The link provided by Mills for Lawson was dead. The citation was: Lawson, K. 2017. Why Survivalist Preppers Make the Best Spouses. Accessed July 6, 2017. http://www.brides.com/story/whysurvivalist-preppers-make-the-best-spouses.

methodology is flawed (e.g., Laycock) or not depicted (e.g., all others). And just as important, none give a quantifiable or falsifiable metric.

For those researchers who do give clear annotations on the descriptive statistics of their population, they also suffer from selection bias and a lack of generalizability to the country as a whole. For example, with an n=248, Mitchell's national survey found survivalists were 89% male, 96.8% white, and educated (52.4% had a bachelor's degree or higher) (Mitchell, 2002). While insightful, his data suffers from selection bias as it was culled from identified (non-random) survivalists.

Far more recent work was done by Wallace. Using a Qualtrics survey, she found 24% of respondents (127 of 520) self-identified as either preppers or survivalists (of which she combined into a single group), which would extrapolate to 61 million Americans. By her data, statistically significant indicators of prepper self-identification that I also analyze were race (Black only, $p < .1$) and level of education ($p < .05$). Age, gender, income, and political affiliation had no statistical impact. However, Wallace notes the limitations and potential flaws of her own study. First, the term "survivalist" was not defined in the survey. As it was on both disaster and crime, her survey population was free to interpret the question as they saw fit. Only 26% of people said they were both a survivalist *and* a prepper. Perhaps for the former definition they considered a week of emergency supplies as adequate, or owning a gun, or being the *survivor* of a previous crime (which was true in the case of 25% of self-identified

survivalists in her study), or the victim of racism.[24] Second, Wallace noted "the sample is not nationally representative and results may not be generalizable" (Wallace, 2020).

III. Quantitative data and analysis

"[S]urvivalists do not accommodate themselves readily to favored methods of social science research – surveys, systematic standardized interviewing, and subsequent enumeration. Those who have sought to impose these approaches onto survivalism have been disappointed" (Mitchell, 2002).

A. Methodology and research design

"Good science" should be reliable (able to be reproduced), valid (accurate), and falsifiable (King et al., 1994). Quantifiable prepper research is lacking in these areas, hobbling the assessments and depictions of preppers/survivalists showcased above. Part of this is due to the cases studied. As shown previously, even the best examples from the literature possess selection bias. This is highly problematic as "[n]o amount of evidence gathered from cases selected on the DV will confirm most hypothesis" (Ibid). And, the methodological approaches are all nearly identical, most are Narratives according to Herrera and are thus non-formal analysis of data (Herrera, 2006).[25] To expand the work on preppers then, here in this section, using Herrera's methodological labeling, I give mostly Quantitative Analysis, but do provide some Theory, which "encompasses any abstract thought, philosophy, or set of rules, principles, beliefs, or ideas which has not been formalized into mathematical language". There is no clarity

[24] Wallace hinted these latter two reasons might be a factor. For example, she stated, "Crime victims were significantly more likely to identify as survivalists."

[25] Formally, Herrera says Narrative "can mean ethnography, discourse analysis, case studies, or any analysis of data that has not been formalized through quantification."

(or even agreement) regarding interpretation of words like prepper or survivalist, so I introduce a clear demarcation, that of resilient citizen.

For source information, although supplemented with data from the US Census Bureau and the US Department of Agriculture, I utilize information primarily from the 2018 National Household Survey (NHS) administered by FEMA with supplementary facts from their 2017 NHS.[26] FEMA's data is reproducible, and in fact is done so each year with minor adjustments. It is critically important to note then, that each of these surveys are standalone findings. They are not panel data; they are independent products. For 2018, the results of the telephonic, live operator calls were released in January of 2020 (US Federal Emergency Management Agency, 2020). There were 5003 individuals 18 years of age or older polled.[27] 2000 were a random representation from all 50 US states, plus the District of Columbia and the territories of Puerto Rico, Guam, and the US Virgin Islands. Another 3000 oversample respondents were from six groups of 500 each, geographically dispersed in locales, but collectively representing six major hazard types that FEMA wished to query: tornado, flood, hurricane, wildfire, earthquake, or nuclear event. As a critical assumption, I treat these 3000 respondent oversamples as a random sampling when aggregated.[28] With a few other caveats that I list below, because this

[26] The 2017 and 2018 surveys were not identical in administration as the former left out several US territories such as Puerto Rico, Guam, and the US Virgin Islands. The 2018 database is therefore more representative of the US population and is the most recent available. It thus receives primacy in my analysis. Raw data for both can be found here: https://www.ready.gov/preparedness-research.

[27] Of note, while FEMA conducted telephonic interviews with individuals, many questions were in regards to the overall household's level of readiness. Therefore, I often interchange the term "individual" with "household."

[28] This assumption I believe holds validity for two reasons. First, FEMA still queried close to a national sample, if all six oversample groups are aggregated. Second, in previous research I discovered that the oversample group feared the same top six disasters as the 2000-person core sample at roughly the same rates.

was a national survey, it contains high external validity to non-participants, made all the greater due to replication from repeated annual iterations.

There are a few points about the data collection and interpretation that must be fully noted. First, not all questions were asked of all groups. For example, those living in wildfire prone areas were asked specific questions regarding wildfires to which no other group was subject. Second, some questions led to follow-on queries based upon the response of the parent question. Third, many questions had as allowed responses a variation of "don't know" or "refused to answer." Because of these facts, unless otherwise indicated, I have stripped out all blank responses and additionally removed all "don't know" or "refused to answer" replies and conducted calculations based solely upon clear answers. Fourth, in the data analysis section, the results I provide are unweighted. This admittedly introduces some bias into the bivariate results (for example, whites comprised 66% of the survey respondents, but only 60% of the US population in 2018), but I believe I provide enough caution signs, where appropriate, to minimize this concern. Last, there could be self-bias in the answers given. However, FEMA repeats this study annually and results seem to be fairly consistent.[29]

The remainder of this section provides the quantitative results and analysis. To add to the debate, I introduce a theoretical cleavage marker to delineate those who are resilient citizens, a term I reinterpret from Huddleston. I make this definition testable and quantifiable using 31-days as the standard. This length of time was initially selected as a split point due to three factors. First, it was at least twice the length of the high end (14-day) recommendation of

[29] While I do not wish away this problem, I assume it to be minimal. FEMA has indicated it will release the full dataset of 2019 and 2020 sometime at the end of the summer of 2021. This assumption could be further tested with four full years of data.

the American Red Cross. Second, several big box stores such as Costco or online disaster retailers sell emergency supplies in packagers of one-month (30-days) so I sought a number just beyond that. Third, as noted in the definitions above, prepping is "medium- to long-term survival lasting weeks, months, or even years." As will be shown below, just under five-percent of all survey respondents met or exceeded the 31-day level, so it became far more statistically defensible as a choice. Other authors, when studying income for example, have utilized the top decile to isolate extremity (Gilens & Page, 2014), so I am within accepted norms. Just like those authors I also included more restrictive cut-off points for further comparison.[30]

I can provide descriptive statistics on race, gender, income, family status, primary home language, urban/rural locale, and even disability status for resilient citizens with this FEMA data. In addition, I offer some commentary on inclusiveness and ideology, both via proxies. Overall, these findings offer some surprises and should call into question popular depictions of "all" preppers. To be clear, this FEMA data is a snapshot in time, that of 2018 primarily with some additional supporting data from 2017. I do not provide counts or speculation on the number or composition of preppers or resilient citizens for any other timeframe. It could be the case that preppers were far more monolithic in their distribution in a previous era.

[30] I also looked at a slightly lower standard, using 30-days as a cutoff as Figure 1 shows a spike at that level which could shift the analysis. Results (not shown in this chapter or the back-up R-coding) indicated using this cleavage point would not significantly impact my findings. In fact, they would make resilient citizens look even *more* like regulars in certain variables. With more years of data, this is a point worthy of further inquiry.

B. How many preppers are there? Getting close to an answer by counting Resilient Citizens.

Professor Chad Huddleston titled his recent work "Prepper as Resilient Citizen" (Huddleston, 2016). To him, preppers are normal people, but he acknowledges individual metrics surrounding them are lacking. Therefore, in a first step to theoretically categorize, I first reinterpret Huddleston's resilient citizen moniker as follows: a resilient citizen is a private actor who can survive for 31 or more days at home without power, water, or transportation. This is the only criterion and meets the testing and quantification requirements for research. In this designation, many preppers (and survivalists) are subsumed under resilient citizens.[31] Of note, the individual must be a private actor. I restrict all state actors who serve in positions that may grant them access to long term government sourced power, water, etc.

For base analysis, I utilized the 2018 FEMA NHS. FEMA asked interviewees "Do you have enough supplies set aside in your home to get you through three days or more without power or running water and without transportation?" Of those who said yes, a follow up question was "How many days do you think you could last in your home without power, running water, or transportation?"[32] Combining answers to these two questions, there were 4735 clear responses and 213 people indicated they could last 31 days or more.[33] The resilient citizens were thus 4.5% of the survey population (95% confidence interval (CI) = 3.9% – 5.1%). Since this is a representative sample of the US, extrapolation yields approximately 11.4 million

[31] I further this designation, with additional criteria, in Chapter Four.

[32] 1023 people answered "no" to having a kit for the first question. For these, since no day total was provided, I coded them all at one day. The second question was asked of 3,713 people and the allowed answers ranged from one day to 97 days. This second question was *only* asked of those who indicated they had a 3-day emergency kit at home.

[33] I suspect that these individuals interpret the question as to *publicly* provided power, water, and transportation. My guess is that many resilient citizens, especially those who say they can last 2-3 months or more, have well-water and off-grid power generation capability.

resilient citizens for the year 2018.[34] This result is well below the high-end estimate but is two to three times greater than the lower estimates cited above for preppers.[35] It is also a potential *underestimation* as the survey interviewed just one person. The average resilient citizen respondent indicated 2.24 adults present in the household. Often, but not always, spouses of preppers are preppers themselves, but I stick with the 11.4 million count to be conservative and consistent with further analysis.

For robustness checks, I first stripped out the potentially non-random 3000 oversample responses and found that 90 people out of the 1891 responses in the 2018 core portion of the random sample indicated they could last 31 days or more; this yielded a 4.8% result (95% CI = 3.9 – 5.8%). Therefore, the oversample crowd seems to have just as many resilient citizens as the general population portion of the survey.[36] For a second check, as well as a test for validity and reproducibility, I ran the calculations on the 2017 data and found 3.8% of respondents (95% CI = 3.3 – 4.4%) met the criteria for resilient citizen.[37] Year over year then, the difference between 2017 and 2018 could simply be explained by the margin of error, but it could also show per annum growth in the number of resilient citizens, or a mixture of both.

As depicted in Figure 1, the distribution of individuals preparing is positively skewed, making one-tail analysis appropriate. In a one-tailed environment, the outermost ~5% of the

[34] Based upon a 2018 US adult population of 253,768,092 (US Census Bureau 2019). Calculations based upon the number of households in America yields a similar answer.
[35] Geddes warns that one potential failure of large-N studies is that the value of a variable does not really match what the proposed measurement is (Geddes 2003). Here though, the FEMA data is directly a measurement of perceived or actual resilience, exactly what I am trying to ascertain. And clearly, depictions of gender, income, race, and other descriptive statistics are exact (or near exact) representations.
[36] The subsets had a range of 1.6% resilient citizen among the Nuclear Explosion oversample and 6.6% among the Wildfire oversample. The Urban-Rural divide I investigate later probably explains this.
[37] 189 individuals out of 4942 who provided a valid response. Of note, all calculations on FEMA 2017 data were done via Excel and not R-code.

tail end observations consequently comprise outliers and this is where all of those at 31-days or more are located. Because of the large y-axis scale, small, single digit responses are not perceptible, so I include a graph (Figure 2) depicting just resilient citizens to highlight the distribution. The methodological literature provides guidance for how to deal with these occurrences. "Extreme Case" analysis is appropriate in large-N studies as long as it "refers back to a larger sample of cases lying in the background of the analysis" (Seawright & Gerring, 2008). Doing so avoids violating "the social science folk wisdom warning us not to 'select on the dependent variable'" (Ibid). It "is a self-conscious attempt to *maximize* variance on the dimension of interest, not to minimize it" (emphasis in original) (Gerring, 2008).

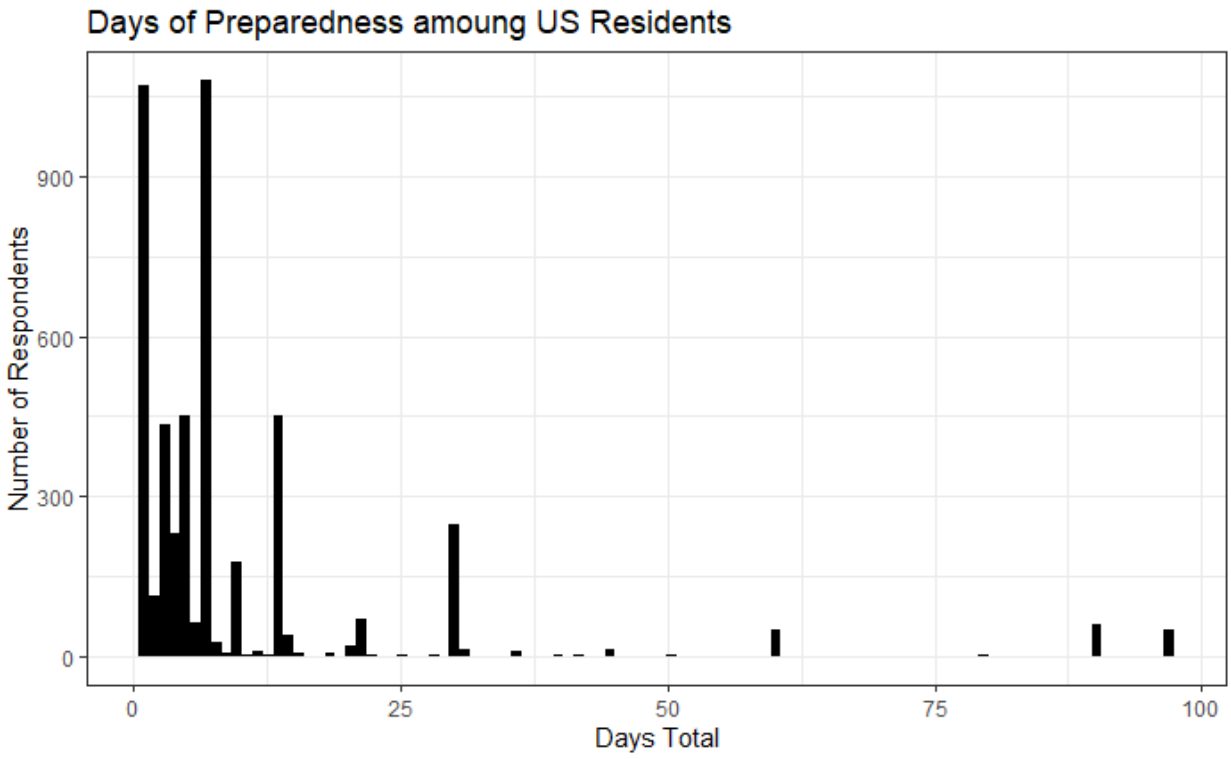

Figure 1: How many days total could respondents last at home without power, water, or transportation? All Respondents.

Therefore, the descriptive statistics provided in the rest of this section are split into two groups: the extreme cases are the resilient citizens, all others (the 95%) are considered normal (or "typical" to use Gerring's nomenclature). I use the terms "resilient citizen" and "regular" then, for simplicity when discussing the two.

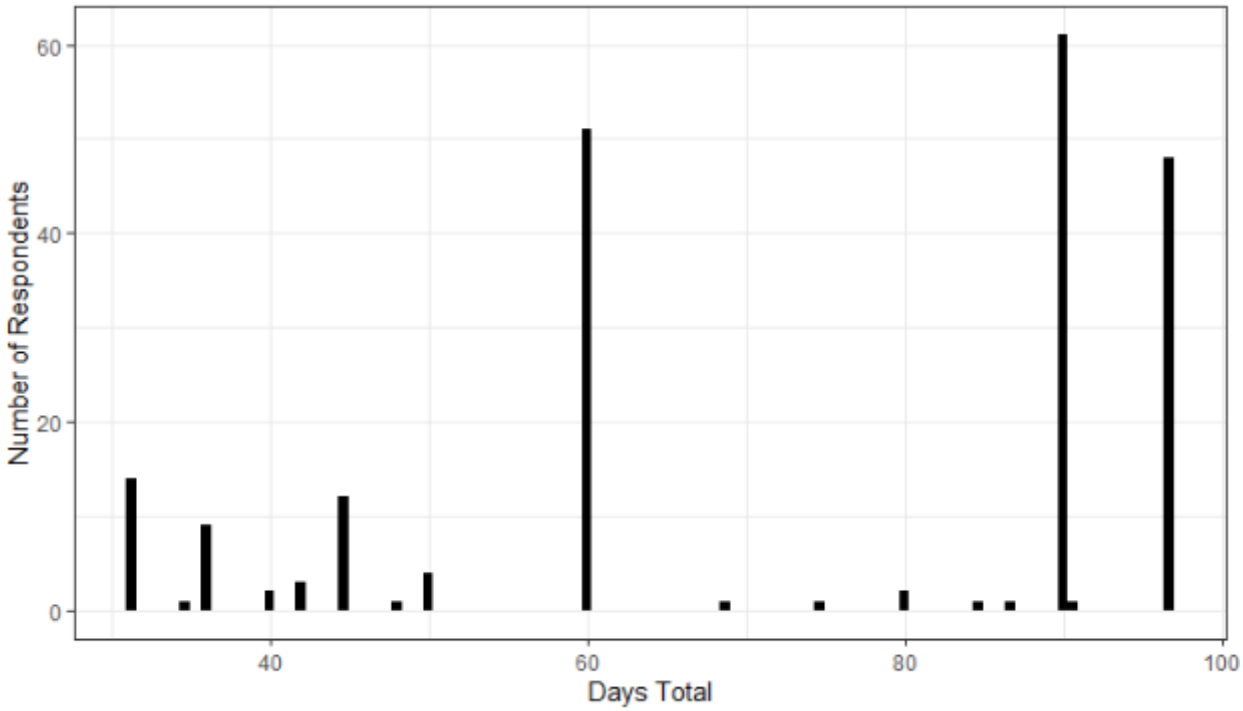

Figure 2: How many days total could respondents last at home without power, water, or transportation? Resilient Citizens only.

As a final measure of comparison, perhaps 31 days is not "extreme" enough. After all, some individuals are preparing for large scale economic collapse, nuclear war, pandemics, etc. Does the composition of resilient citizen change if I include only those individuals that could last at home for 90 days or more? With the 2018 FEMA sample population, only 110 people meet this cutoff. This is 2.3% (CI = 1.9% - 2.8%) or roughly 5.8 million Americans. And finally, there is the select group that indicated 97 days of preparedness or more. FEMA capped and coded all responses of 97 days or greater (e.g., 120 days, 365 days, etc.) at 97. Therefore, some

respondents may have indicated higher levels, but this information was not captured. Just 48 people (1%, CI = .8% - 1.4%) told FEMA they could survive at this extended duration. This is over five standard deviations from the mean, yet still implies a little over 2.5 million people in the US are gearing up for disasters of epic proportions. Perhaps it is these latter two groups which come closer to the popular demographic portrayal of preppers? For ease of reference then, borrowing a term used to depict wealth, I label these last two groups Highly Resilient Citizens (HRCs, those at 90 days or more of preparedness) and Ultra-Highly Resilient Citizens (UHRCs, those at 97+ days).[38]

C. The Composition and Characteristics of Resilient Citizens

"[Y]ou probably imagined a prepper as a middle-aged white guy who fantasized about nuclear warfare in order to justify his gun collection to his wife."
Josh Centers, prepper. (Centers, 2020)

How do resilient citizens, in the three categories I describe above, compare to regulars? Results are shown by groups below, first with bivariate data and then with Ordinary Least Squares regression.[39] Due to their relatively low numbers, I exercise caution in reading too much into the Highly Resilient Citizens and Ultra-Highly Resilient Citizens results, but their overall contours are still illuminative. Because of this I primarily focus on the results of my baseline categorization of resilient citizens (31+ days of survival).

[38] Wealthy individuals are often categorized as High-Net-Worth Individuals and Ultra-high-net-worth individuals. These alternative terms could also be used to describe "normal" resilient citizens. Also, see footnote 153.
[39] All census data facts, unless otherwise noted come from (US Census Bureau n.d.) at https://www.census.gov/quickfacts/fact/table/US/IPE120218.

1. Gender, age, and family demographics

First, I look at a few straightforward metrics as the results do not require much interpretation. The speculation by both Dominants and many Challengers is that more men than women prepare. This is supported by the data. 69% of resilient citizens identify as men as compared to the regulars of 50% men. As there are approximately the same percentages of adult men and women (49% and 51% respectively) in the US populace, this is a skewed, but not unanticipated, result.[40] In moving to HRCs, they are also 69% men. As for UHRCs, there is a decent jump up to 77% male.

For age, resilient citizens were a couple of years older than regulars and the difference was statistically significant.[41] HRCs and UHRCs were older still, but not statistically significant, most likely due to the low number of cases for analysis.

	Men	Women	Age	# of Children living in home
Census	49%	51%	47.2	N/A
Regulars	50%	50%	49.0	0.68
Resilient Citizens	**69%*** **	31%	**51.5***	0.61
HRC	69%	31%	52.4	0.66
UHRC	77%	23%	53.0	0.56

($^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$)

Table 1: Gender, Age, Children averages

[40] One can find various women-oriented prepper websites though, for example: The Survival Mom, Prepper Chicks, The Organic Prepper, and www.rural-revolution.com.

[41] The age from the US census data (https://www.census.gov/data/tables/time-series/demo/popest/2010s-national-detail.html) is an estimate. The census calculates its number based on everyone living in America, including those under the age of 18. In 2018, this was 37.2, but there is no separate data for average *adult* age. I add nine years (the approximate mean of 0-17.9 years) to the census as a back-of-the-envelope calculation.

Resilient citizens had fewer children still living at home, but the results were not statistically significant and included some fluctuation. This result is not incredibly surprising given the average age of those surveyed overall. In 2018 the average family had 1.9 children, so at this age, many of the offspring may have left the home for college or career.[42] Table 1 summarizes the data.

2. Race

Race is far more complex. Both Dominants and Challengers believe whites comprise the bulk of preppers, but to differing degrees. Dominants see it as nearly exclusive; many Challengers have a more diverse picture in mind. With the exception of Wallace (*supra*) Challengers do not offer hypotheses or data to suggest the prevalence is roughly proportional among the races. Both the US Census and the FEMA survey code primary race in six categories, but each also includes mixed race responses. Unfortunately, the FEMA survey split out Hispanics in a separate question and they were the only group by FEMA's methodology to include a mixed race. This makes accurate tabulation difficult for Hispanics and generally leads to severe undercounting of that group in much of my data. Also, racial totals will not sum to 100% because of this. To portray information as clearly as possible, I include mixed race results in the denominator for calculating percentages, but only primary race in the numerators.[43] I also do not weight racial responses to correct to US Census tabulations. Results for 2018 are shown in Figure 3 and Table 2.

[42] https://www.statista.com/statistics/183657/average-size-of-a-family-in-the-us/.
[43] This primarily undercounts Hispanic mixed-race responses. I count as Hispanic alone only those who answered yes to the question on Hispanic origin and gave no other race in the primary race question.

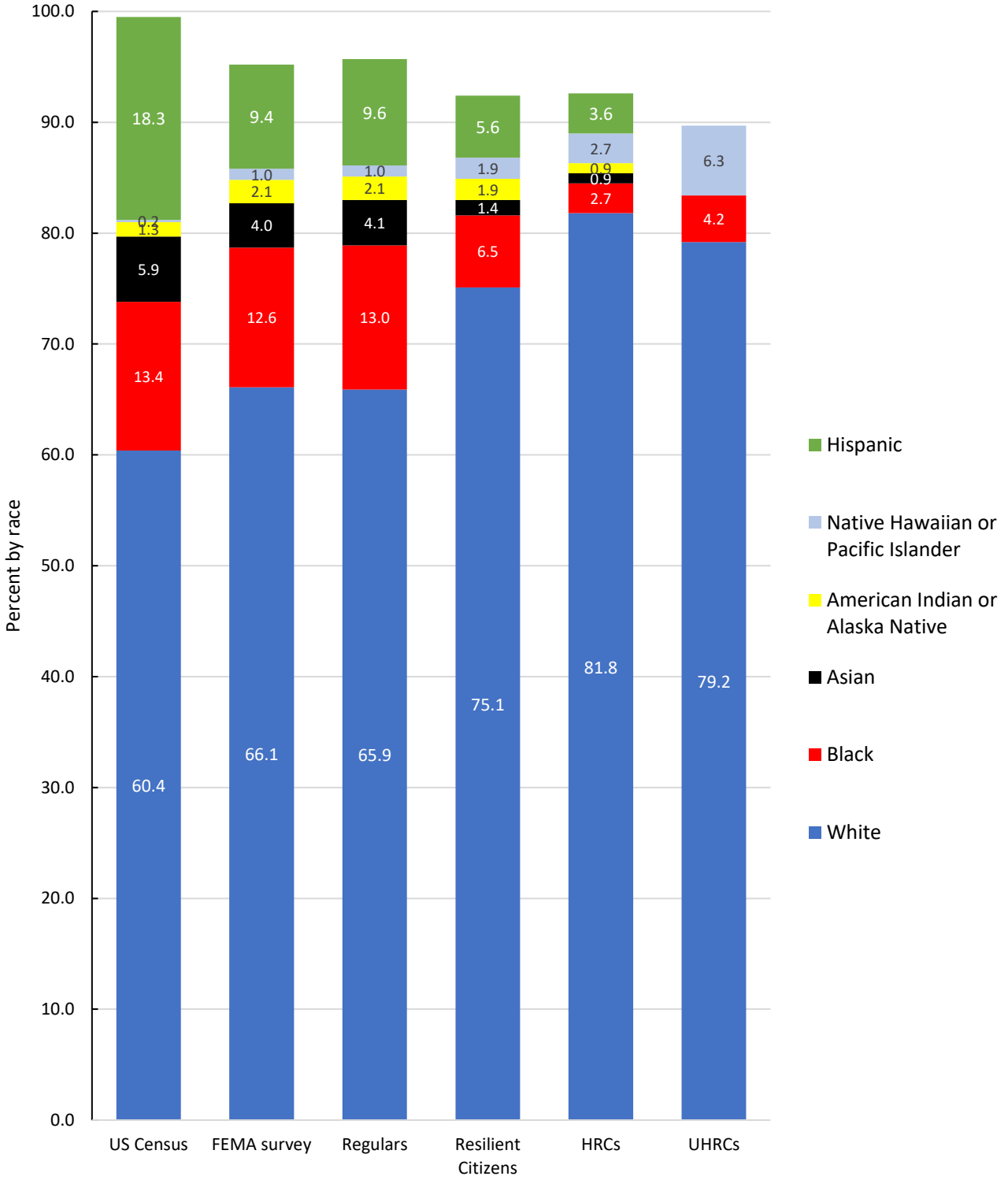

Figure 3: 2018 Comparative racial composition of various groups

	White	Black	Asian	American Indian or Alaska Native	Native Hawaiian or Pacific Islander	Hispanic
US Census	60.4	13.4	5.9	1.3	0.2	18.3
FEMA survey	66.1	12.6	4.0	2.1	1.0	9.4
Regulars	65.9	13.0	4.1	2.1	1.0	9.6
Resilient Citizens	75.1	6.5	1.4	1.9	1.9	5.6
HRCs	81.8	2.7	0.9	0.9	2.7	3.6
UHRCs	79.2	4.2	N/A	N/A	6.3	N/A

Table 2: 2018 Tabulated statistics of various groups by percent

Several interesting findings are notable. From FEMAs survey, almost 25% of resilient citizens are *not* white alone and the true figure might be higher since whites are oversampled by 6%. This would extrapolate out to around 2.8 million non-white or mixed-white resilient citizens in the United States, *ceteris paribus*. While whites comprise the preponderance of the resilient citizen population, it is a proportional difference of only 9% (by total) from the FEMA baseline of whites surveyed. Whites are more heavily represented in the HRCs and UHRCs, but in no category garner more than 82%. Blacks, Asians, and Hispanics are underrepresented among resilient citizens and American Indian or Alaskan Native seem to be proportionally represented. I do not minimize the fact that Blacks, Asians, and Hispanics are less likely to be resilient citizens, but perhaps this is heavily influenced by other variables such as income or where they live. I return to this in the regressions later. As compared to the findings from Wallace, three of the four racial categories (Whites, Hispanics, and Asians) for resilient citizens were within half of a percentage point of her self-identified survivalist or prepper composition.

The most overrepresented race though in the resilient citizen, HRC, and UHRC populations are not whites, but rather Native Hawaiian or Pacific Islanders (NH/PI). They are between two and six times *more* likely to be found as extremely prepared. Out of the 213 resilient citizens, only four were NH/PI, but three of these four indicated the maximum days of total preparedness at home (97 days). Perhaps for this NH/PI finding, it is due simply to an issue of oversampling by FEMA or to a luck of the draw. For quality control then, I pulled the data from the 2017 FEMA survey. Three of the 189 resilient citizens in that group (1.6%) were NH/PI for their primary race. Two had the maximum 97 days of preparedness and the third had 90 days. When aggregating these seven individuals (three from 2017 and four from 2018), income did not seem to be a factor (see below). Two indicated a yearly salary of $12-$24,000 and only one stated a range of $120,000 or more. Even more interesting, four had only a high school diploma and only two lived in Hawaii (the others lived in North Carolina, California, Texas, or Florida).

In fact, the NH/PI group appears to be the most prepared group by race among resilient citizens in 2017 and 2018 as depicted in Figure 4. They also possess the highest overall days of preparedness in racial averages for all respondents in 2018.[44] This could be due to the abundance of flora and fauna, both land-based and from the sea, as I allude to later in Chapter Four. For resilient citizens, whites only had the fourth highest average in 2017 and third highest in 2018, contrary to any predictions by either Dominants or Challengers. While this could still be a sampling error issue due to the exceptionally small number of NH/PI, Asian, Hispanic, and

[44] For this I calculate the 2018 averages with the full sample of respondents with the assumption that all respondents who did NOT have a 3-day kit could last at least one day at home.

American Indian/Alaska Native in each year, it is nevertheless a surprise.[45] FEMA's 2019 survey release should prove interesting to see if this is a trend or an anomaly. On a final note, all races except Asians saw a decline from 2017 to 2018 as far as days of preparedness among resilient citizens.

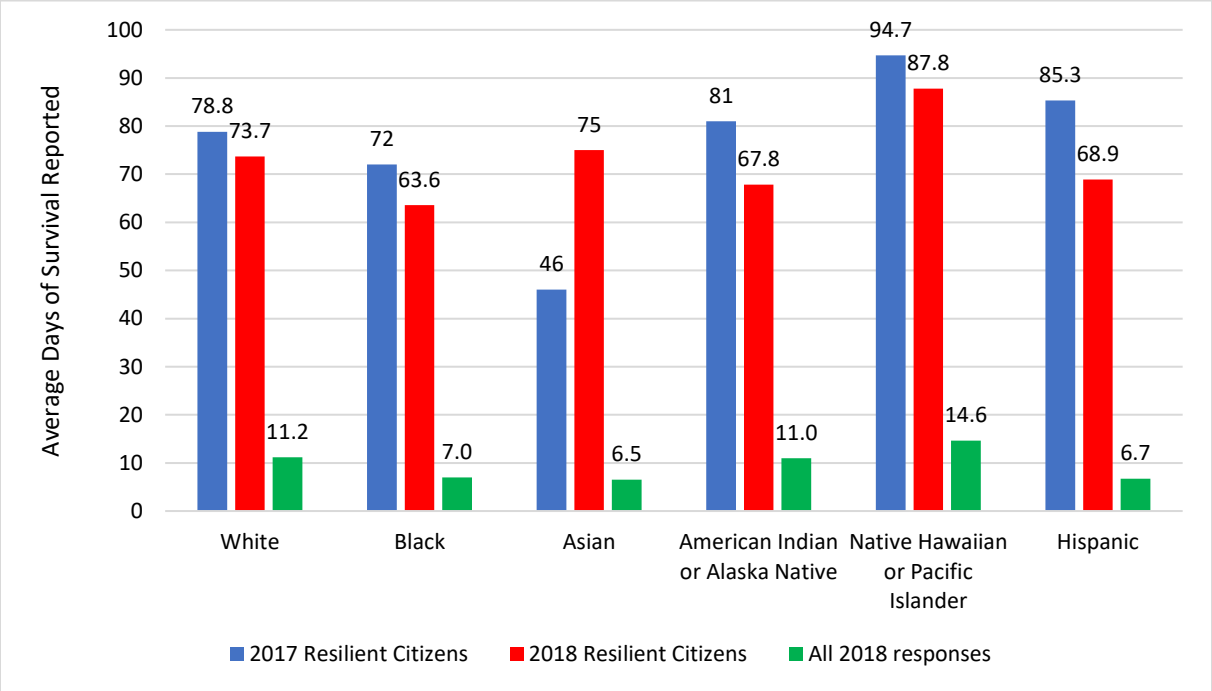

Figure 4: Days of Preparedness by Group, Race, and Year

For further confirmation of diversity, this time lingual and not racial, I looked at the number of respondents who did not speak English as their primary language at home. Using this measure, 8.8% of all Resilient Citizens did not speak English as their primary language as compared to the 15% of the regulars. These Resilient Citizens had an average of 72.5 days of preparedness. Roughly a third of the non-English speaking group were from Puerto Rico. If I

[45] See this chapter's Appendix for a complete breakdown and an expansion of how some minority responses could still just be due to chance.

remove the Puerto Rican responses and extrapolate to the rest of the United States, this still infers at least 580,000 non-primary English language individuals are resilient citizens.

3. Education

Those conducting in-person field observations or interviews habitually pointed out the educational levels of the individuals in their research (e.g., Lamy 1996, Gonowon 2011, Sims 2017). If the person was highly educated, the researcher (usually a Challenger) pointed this out. However, while there are some accusations by the Dominants that people who prepare are less educated (Foster, 2016; O'Connell, 2020), neither Challengers nor Dominants as a trend indicated a hypothesis. The results support this ambivalence. There does not seem to be a difference in educational levels of resilient citizens to regulars. The 2018 Census data revealed that 88% of Americans achieved a high school degree with 31.5% attaining a bachelor's degree or higher. FEMAs sample population was roughly the same for high school but higher for college; although the census only counted those aged 25 and up in their numbers while FEMA's age cutoff was 18 years of age and older. For the regulars, 90% had a high school diploma and 44% possessed a bachelors. The numbers for resilient citizens were the same as regulars for high school and 42% for a bachelors. There was no statistically significant difference for education overall. The plots of education distribution are shown below in Figures 5 and 6.

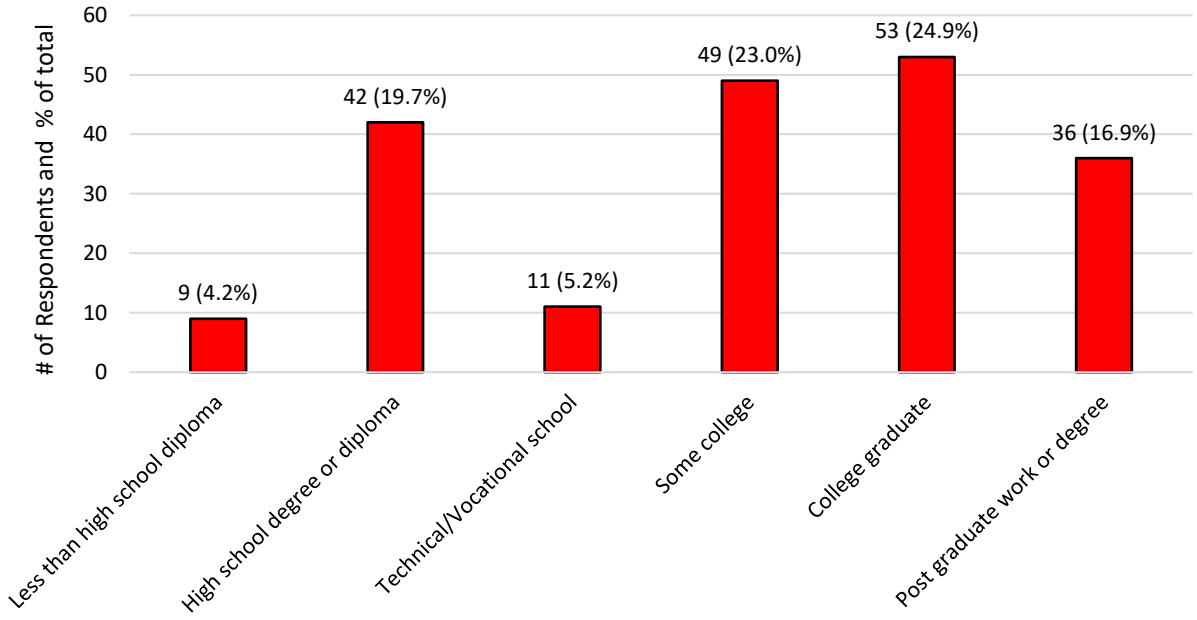

Figure 5: Educational range of resilient citizens

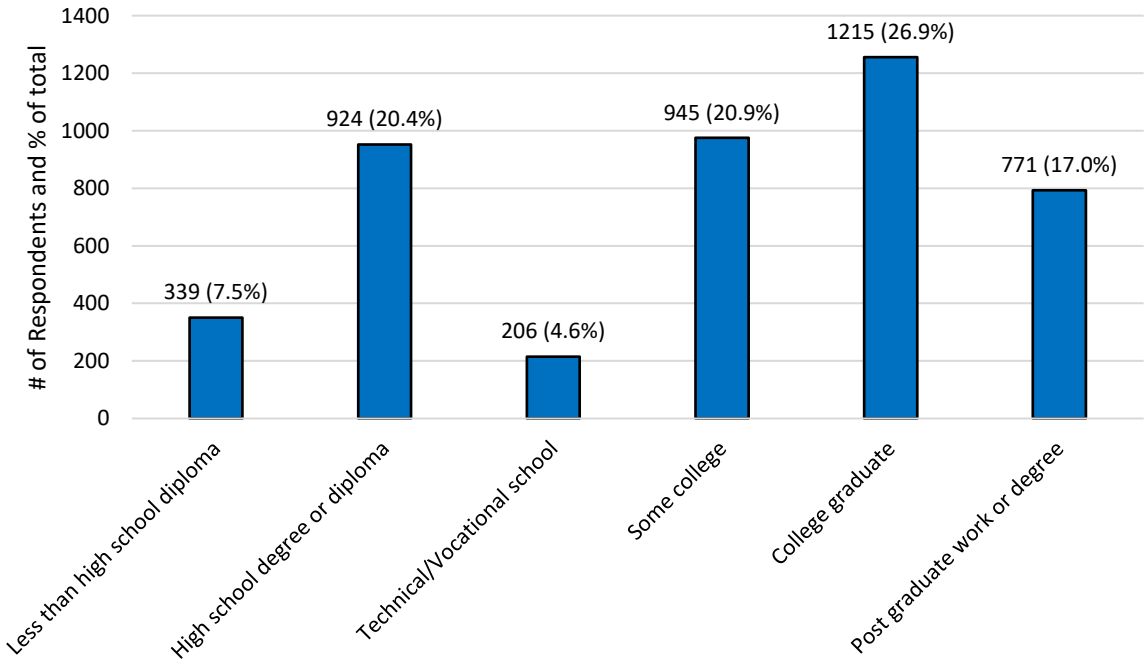

Figure 6: Educational range of regulars

HRCs and UHRCs also reflect the rough equivalence among the groups. 91% of HRCs and 93% of UHRCs finished high school and college graduate responses were 38% and 42% respectively. All-in-all, the comparison of the groups shows nearly imperceptible differences. As shown in Figure 7, each group's mean hovers right around four, which is "some college".

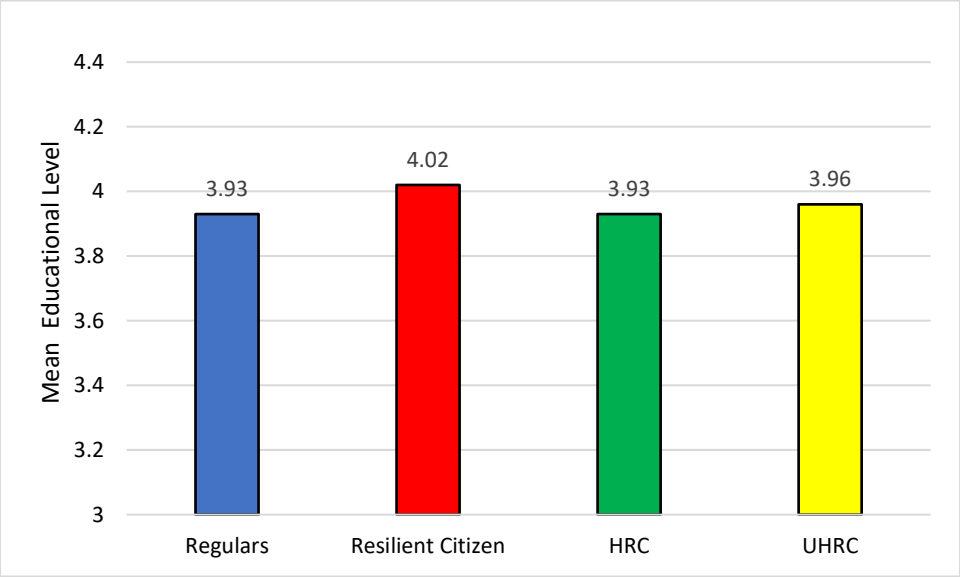

Figure 7: Educational mean of groups
Note: 3 = Technical/Vocational school, 4 = Some college, 5 = College graduate

4. Disability, transportation, and inclusiveness

What about disability? The former head of FEMA, Craig Fulgate, stated that at the time of Hurricane Katrina in 2005, 20% of Americans (roughly 54 million people) were living with some sort of disability (Fulgate, 2010). The US Census estimate for 2018 was much lower at 8.6%, although they only counted those 65 years of age or younger. How represented among resilient citizens are those individuals living with disabilities? To answer this, I use the following question from FEMA's 2018 survey: "Do you have a disability or a health condition that might

affect your capacity to respond to an emergency situation?"[46] Among regulars, 17% indicated having a disability. Among resilient citizens, 19.4% did, but the differences were not statistically significant compared to each other. Oddly HRCs and UHRCs saw even higher rates of reported disability (see Figure 8). Neither Dominants nor Challengers speak much at all about disability, but this finding is still intriguing and supports the notion that prepared individuals really are more like a cross-section of America.

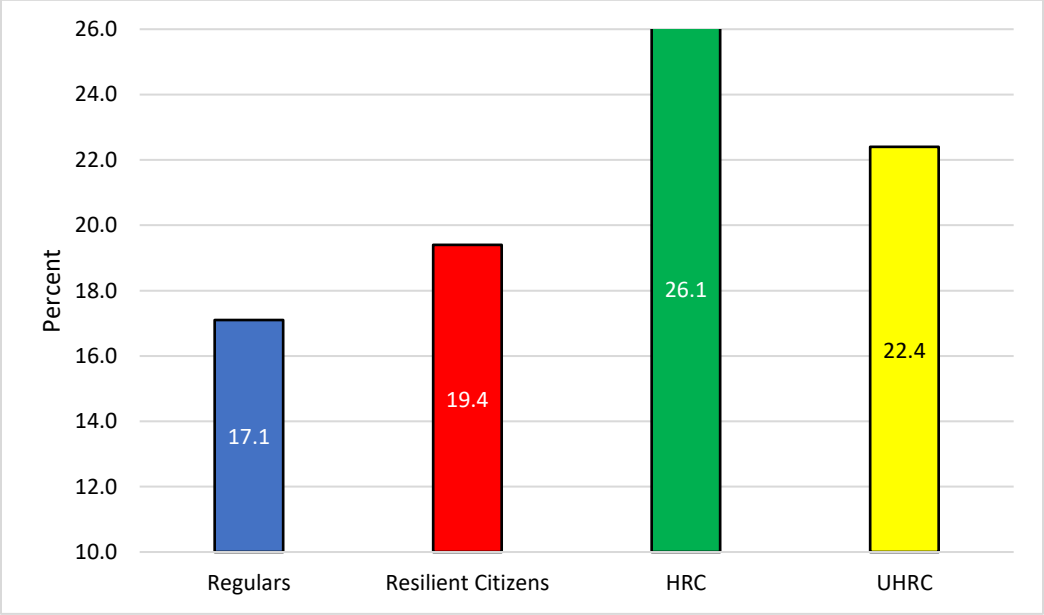

Figure 8: Percent of individuals living with a disability

Relatedly, in 2013 a US District Court judge ruled against New York City Mayor Michael Bloomberg, finding the mayor and the city at fault for a failure to evacuate disabled individuals adequately after Superstorm Sandy (*Brooklyn Ctr. For Independence of the Disabled v.*

[46] FEMA classified disabilities involving: "A mobility, hearing, vision, cognitive, or intellectual disability or physical, mental, or health condition."

Bloomberg, 2013). That decision noted 11% (just under 900,000) of New York City residents had a disability. It further went on to state:

> "The City's emergency evacuation plans rely heavily on the use of public transportation. 'A successful evacuation will depend on the efficient use of mass transportation.'; *id.* (noting that, '[i]n the worst case scenario, . . . about 1.83 million [people] are expected to use public transportation' to evacuate during an emergency)" (Ibid).

Do resilient citizens require public transportation? FEMA asked: "In the event of a disaster that required you to leave your area, would you need to rely on public transportation or the local authorities for transportation in order to leave?" While 22.4% of regulars said yes, only 10.4% of resilient citizens, and a nearly equivalent percent of HRCs and UHRCs, indicated they would rely on public transportation.[47] What to make of this? Perhaps it is a matter of where individuals live.[48] Maybe urban residents rely more on transportation than rural residents because of the costs of car ownership in a city or the easy use of alternative travel. Or, perhaps it is part of the resilience mindset? Prepper literature discusses the concept of "bugging out", that is, in the face of an impending disaster, fleeing to safety. Bugging out may be a fancy way of saying evacuation, but there is actually a clear difference between resilient citizens and regulars regarding this concept. When asked "Do you have emergency supplies already packed that you can grab easily in case you have to evacuate your home quickly?" 72% of resilient citizens said yes as compared to just 43.8% of regulars ($p < .001$).

[47] For regulars vs. resilient citizens, the difference was statistically significant at $p < .001$.
[48] FEMA provides zip code data that later research could investigate for this finding.

Lastly, in the manner of community or inclusiveness, some Dominants (e.g., Foster 2016) claim that preppers are only out for themselves and will turn a blind eye on the suffering of others during a disaster. Others take issue with this depiction of callousness with one remarking many preppers make a distinction between those who cannot prepare versus those who refuse to prepare (Lewis, 2012). Since people are far more likely to be rescued by a neighbor after a catastrophe – in some instances the ratio is 9:1 – than by a professional crew (Muir-Wood, 2016) it would be helpful to know if those nearby are dependable for aid. FEMA has an indirect measure to potentially answer this query. They asked if people would check on their neighbor after a disaster to "make sure they are okay." Resilient citizens were slightly more likely to check in (68.4%) versus regulars (66.5%), but the difference was not statistically significant.

5. Money Matters

Next, I look at finances. Maybe all that separates regulars from resilient citizens is how much they make. With more money, one can prepare at higher levels. Several questions from FEMA queried along these lines. Put together, they paint a picture that shows regulars and resilient citizens have nearly identical levels of income, but concerning disasters, they handle their money very differently.

I start with income. FEMA's question on this asked for monthly household income on a 12-point (1-12) ordinal (rather than numerical) scale with unequal jumps between incomes.[49]

[49] The potential valued monthly income answers were: Under $60, $60 to $499, $500 to $999, $1,000 to $1,999, $2,000 to $2,999, $3,000 to $3,999, $4,000 to $4,999, $5,000 to $7,499, $7,500 to $9,999, $10,000 to $14,999, $15,000 to $19,999, and $20,000 and over.

Resilient citizens indicated a mean score of 7.5 and regulars at 7.0 (which translates to ~$4500 a month and $4000 a month, or $54,000 and $48,000 per year, respectively). I provide a boxplot in Figure 9 so the reader can see the distribution. The difference was statistically significant, but only at $p < .1$.[50] Of note, US Census data indicates that the average 2018 household annual income was just over $60,000. Therefore, FEMA's surveyed population of both regulars and resilient citizens average household income was lower than the country as a whole.

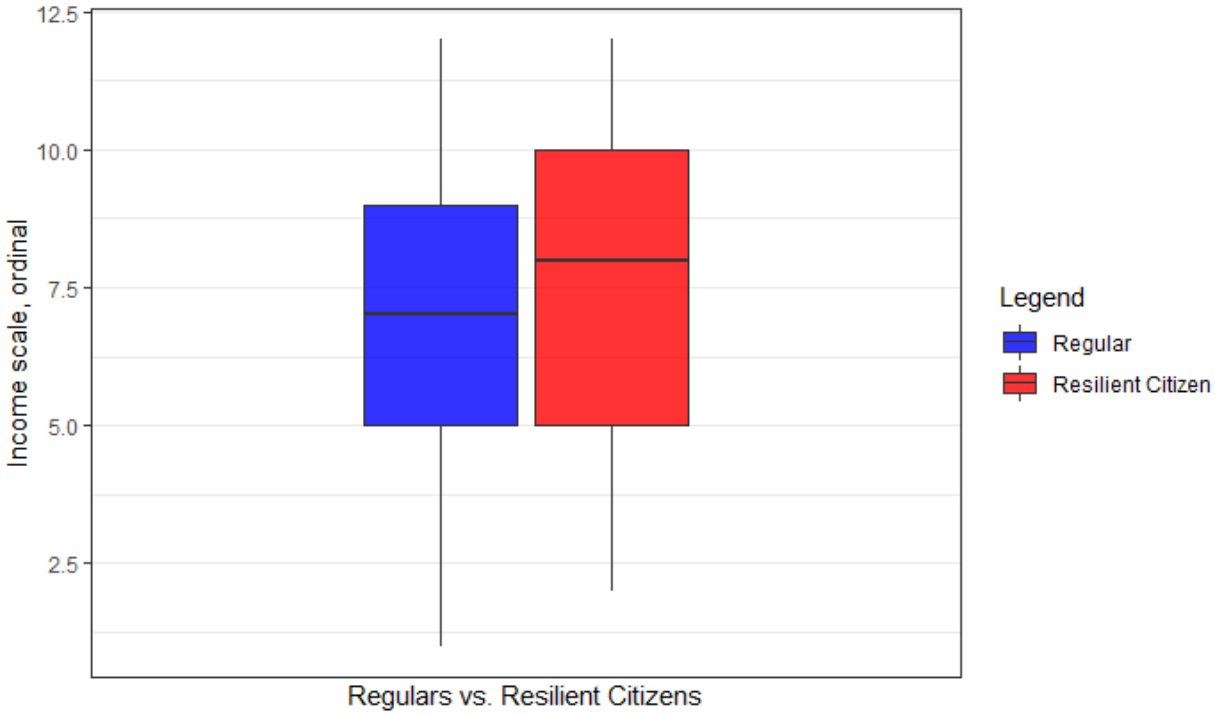

Figure 9: Income distribution and median

[50] And the significance disappeared when comparing regulars to HRCs or UHRCs although this may be due to the small number of cases for HRCs and UHRCs since both groups had slightly higher incomes. HRCs made ~$25 a month more than resilient citizens and UHRCs made ~$146 more.

This could be due to respondent's markedly lower feedback on this question. Just over 40% of resilient citizens *and* regulars failed to answer their income levels, which may have impacted the regression results later in this section. The literature on high net worth individuals, especially in a prepping context, finds them to be incredibly tight-lipped and clandestine.

The next question regards having money set aside for emergencies. It was a dichotomous answer of yes or no. Here there was a 13-point difference between regulars who said yes (67.9%) and resilient citizens (81.5%) which was statistically significant ($p < .001$).[51] As to the total amount of money saved, resilient citizens had a mean amount ($15,779) that was over 50% greater than regulars ($9,552) ($p < .05$). These amounts jumped far higher with HRCs ($20,336) and UHRCs ($20,730). This is shown in Figure 10.

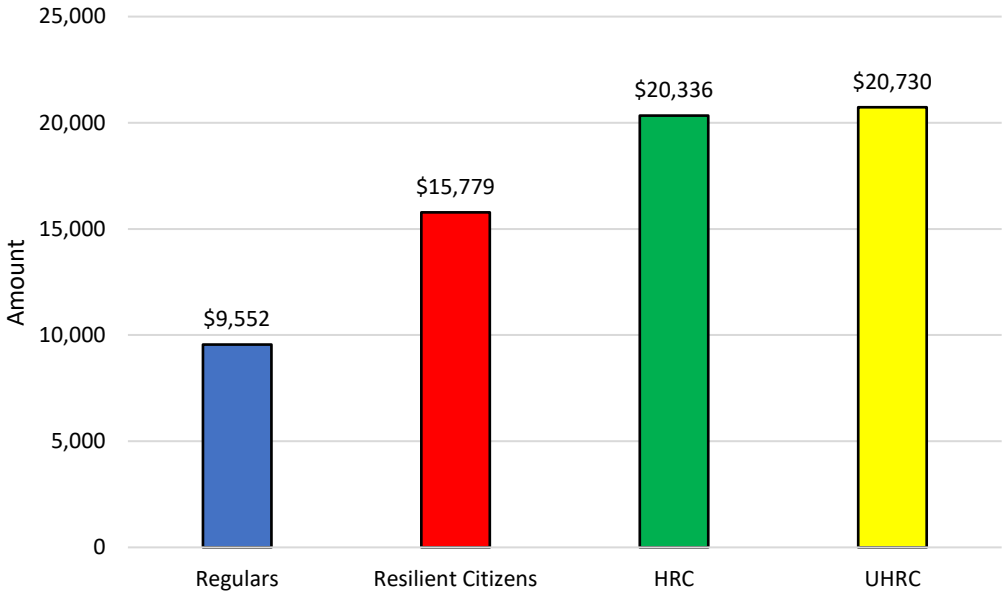

Figure 10: Mean total of money set aside for emergencies

[51] HRC/UHRC rates were 76.4% and 80.8%, respectively.

This matches some of the literature on spending habits of preppers. They are far more likely to invest in their disaster readiness preps than ordinary citizens (Aldousari, 2015).

And finally, resilient citizens were more likely to have homeowner's or renter's insurance than regulars (83.3% vs. 76.6% respectively and statistically significant at $p < .05$). HRCs were close to resilient citizens at a rate of 82.5% with UHRCs having the highest rate of all at 89.1%. Taken collectively, the financial situation and choices of resilient citizens points to a group that considers – and then takes steps to mitigate – risk as it is related to disasters. While resilient citizens make slightly more money than regulars, it could be due to their higher overall age.

6. An Urban-Rural divide?

The next division I ascertain is location. The common depiction is that preppers live in sparsely populated areas. From the Dominant depiction, this is due to the belief that these individuals are quasi-separatists who reject the rest of humanity. However, an alternative explanation is that there is correlation in culture, activity or skillsets of rural areas that overlap more with the survivalist or prepper mindset. Hobbies such as hunting, fishing, camping, raising livestock, or having children participate in Boy Scouts, Girl Scouts, or the 4-H Club can all lower the barrier to longer term prepping. In these areas "prepping" may be synonymous with farm life or getting ready for a long winter. These factors may also partly explain the racial and gender divides seen previously. Challengers list examples of both city dwelling and country dwelling adherents and are thus more geographically ecumenical. To probe this divide, FEMA's 2018 NHS dataset indicated the zip codes of respondents. I took that information and then

coded dwelling locations by using the Rural-Urban Commuting Area Codes (RUCA) from the Economic Research Service division of the United States Department of Agriculture.[52] RUCA goes from 1-10 and proceeds from largest to smallest, i.e., with "1" indicating living in an Urbanized Area Core, a location with 50,000 or more people, and "10" being the most rural.[53]

Approximately 78% of FEMA's survey members resided in Urbanized Area Cores. This is very close to the US Census estimates of 81% (US Census Bureau, 2016). Surprisingly, there were higher than expected rates of resilient citizens (63%), HRCs (53%), and even UHRCs (49%) living in these metropolitan cities. Figure 11 depicts this information. It also shows the Urban to Rural means, that is, the average RUCA of each group.

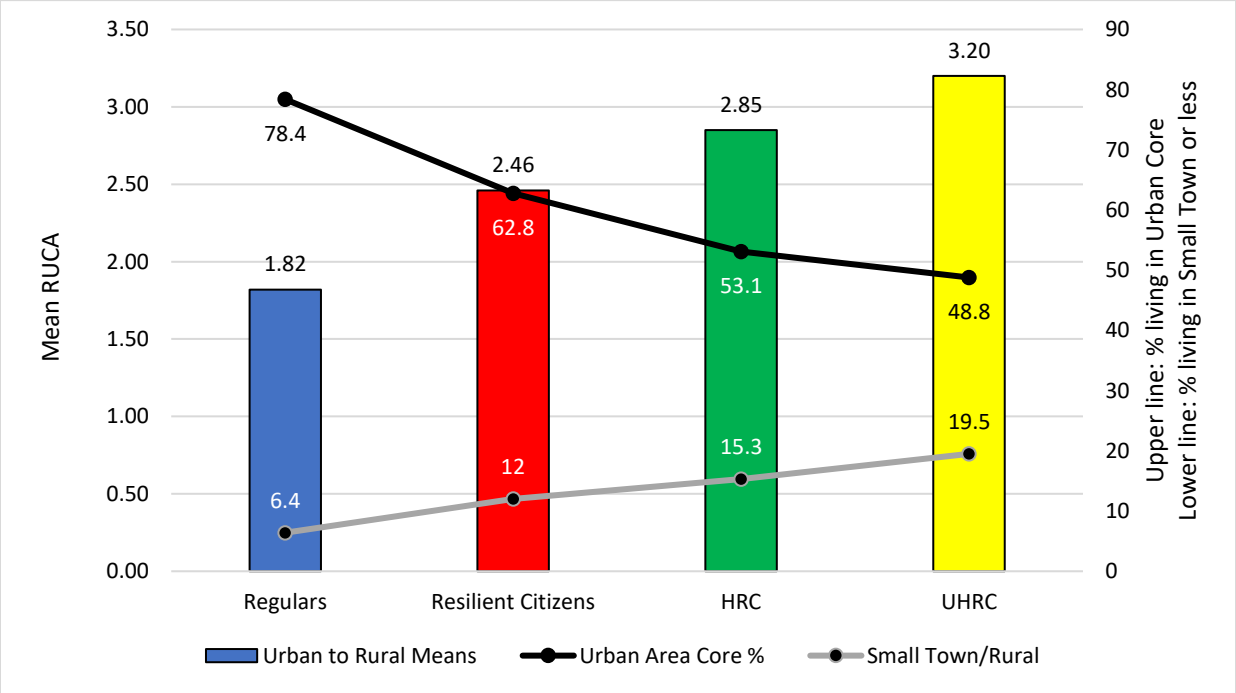

Figure 11: Mean RUCA and % living in Urban Area Cores vs. Small Towns

[52] https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/.
[53] Codes two and three were metropolitan areas that flowed into Urbanized Areas. Codes 4-6 were large Urbanized Clusters (10,000 - 49,999 residents) or places that flowed into them. Codes 7-9 were small Urban Clusters (2,500 – 9,999 residents) or places that flowed into them.

Unsurprisingly, resilient citizens and their derivatives were two to three times more likely to live in small town or rural areas (RUCA 7-10). As one can see, there is a steady rise in means as one moves to higher levels of resiliency. Means of all three groups of resilient citizens as compared to regulars are statistically significant ($p < .001$). There are other interesting observations about this data. First, the majority of resilient citizens in the FEMA survey – and even UHRCs – live in a city or a suburb of a city. Challengers stated resilient citizens are more geographically diverse, but this finding of such a high proportion in or near cities is almost completely unexpected.[54] Perhaps the reason lies in how RUCA is calculated. Any zip code with 50,000 residents gets a RUCA of one. So, people who live in the Bronx, or downtown Chicago or Los Angeles are coded the same as those who live in far less dense areas such as Terre Haute, Indiana or Missoula, Montana. Further analysis on this point is merited.

A second interesting finding comes to light when analyzing the average days total of survival by RUCA. Among regulars, it is the mid-sized towns and their suburbs that have the highest means of total days prepared, although there is no clear trend (Figure 12). Similarly, there is no trend among resilient citizens either (Figure 13) and not a single resilient citizen was found in a RUCA five, six, or nine area (most likely due to the small sample size of 213).[55]

[54] New research by Anna Bounds finds preppers to be more common than anticipated in New York City (Bounds 2020).
[55] I did not code the 2017 data to see if the results would be similar.

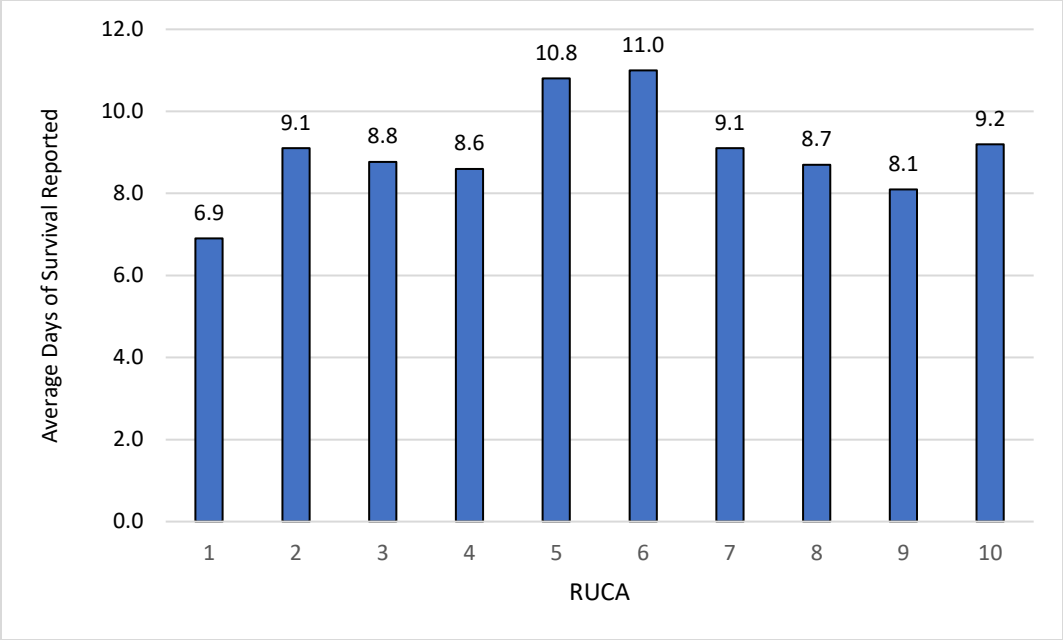

Figure 12: Days of Preparedness by RUCA (Regulars)

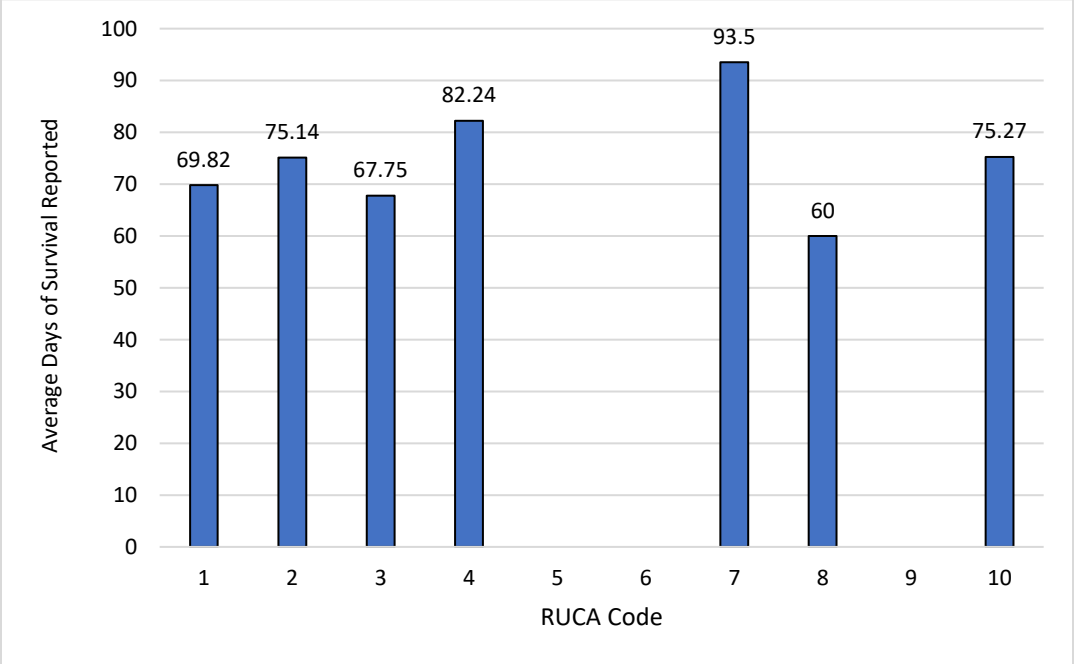

Figure 13: Days of Preparedness by RUCA (Resilient Citizens)

7. Regression analysis

The descriptive statistics listed above were all bivariate in nature. With a sense of the data, I can now turn to multivariate analysis. All variables used here I have previously introduced except for one. Preppers are often thought to be predominantly right-of-center. FEMA did not ask respondents for their political party or ideology, but we do know what state they came from. Using the 2016 Presidential election, I can attempt a weak party proxy: the margin of victory or loss of President Trump by state. When controlling for other independent variables, I might be able to tease out some truth.[56]

Results are heavily consistent with my hypothesis and the Challenger contention that highly prepared individuals are more of a crosscut of citizens than commonly portrayed. Figure 14 displays the results of the first two models.[57] Model One includes several variables of my hypothesis except the proxy for political party. Model Two includes this last variable. White is the omitted base race and male the omitted base gender. The model's results should be read as percentages after the decimal point as the dependent variable is dichotomous and run using Ordinary Least Squares. A positive coefficient indicates a higher correlation of one being a resilient citizen. For example, in Model Two Blacks are 2.2% less likely to be resilient citizens, controlling for other variables in the model, but only at $p < .1$ significance. Racial differences were the only variables to have substantive impact, and even then, were exceptionally low. The largest statistically significant variable is Asian for both models, each negatively correlated by

[56] I also attempted a dummy variable, coding if President Trump won the state, yes or no. This did not produce results much different than I showcase here. Data for state margin of victory comes from https://en.wikipedia.org/wiki/2016_United_States_presidential_election.

[57] I attempted several other combinations (for example, including age), but the results were generally the same pattern.

3.6 – 4.0% with being a resilient citizen. Hispanics were also negatively correlated around 3% for each model. Income, age (not shown), education, geographical residence, and political party either were statistically insignificant or not substantive.

	Dependent variable: Resilient Citizen	
	(1)	(2)
Income	0.002	**0.003**$^{+}$
	(0.002)	(0.002)
Education	-0.0005	-0.001
	(0.003)	(0.003)
Black	-0.015	**-0.022**$^{+}$
	(0.012)	(0.013)
Asian	**-0.040***	**-0.036**$^{+}$
	(0.020)	(0.021)
Alaska Native/ American Indian	0.011	0.013
	(0.027)	(0.028)
Native Hawaiian/ Pacific	0.028	0.066
	(0.041)	(0.049)
Hispanic	**-0.029**$^{+}$	**-0.032**$^{+}$
	(0.016)	(0.016)
Urban to Rural	**0.007*****	**0.007*****
	(0.002)	(0.002)
Female	-0.009	-0.008
	(0.007)	(0.007)
Margin Trump		0.0002
		(0.0002)
Constant	1.037***	1.036***
	(0.019)	(0.019)
Observations	2,582	2,486
R^2	0.011	0.014
Adjusted R^2	0.008	0.010
Residual Std. Error	0.209 (df = 2572)	0.206 (df = 2475)
F Statistic	3.315*** (df = 9;	3.557*** (df = 10;
Note:	$^{+}$p < .1, *p < .05, **p < .01, ***p < .001	

Figure 14: Regression Results (Resilient Citizen Dichotomous)

Surprisingly, gender was neither statistically significant nor substantial even though Table 1 showed a large gap between male and female responses. The reason is that gender seems heavily corrected for by income in truncated versions of Models One and Two.[58]

It is important to denote what I am *not* claiming. I am not arguing that issues of race, income, or even where someone lives are unimportant when it comes to ascertaining differences in levels of preparedness among different categorizations of people based on what are commonly considered control variables. Figure 15 underscores this point. Here, I change the dependent variable to days total of survival.[59] Many variables clearly come into play when looking at Model's Three and Five, which regresses all respondents. Results should be read as a change of days, so Model Three indicates that being female correlates to approximately 1.8 fewer days of total survival than a male, *ceteris paribus*.

I am arguing that these variables, typically as considered control variables in other works, do not serve as *explanatory* variables to determine whether or not someone is a resilient citizen. Recall Figure 1; Models Three and Five show days total divergence, which is substantial and often significant, but at the far left of the distribution. This is completely consistent with much of the disaster research on lower levels of preparedness. If a white male had seven days total of preparedness, Model Three would predict, *ceteris paribus*, that an Asian male would have 4.2 days less and just miss FEMA's recommendation for 3-days of emergency supplies. Therefore, my results *conform* with the established literature at low levels of preparedness.

[58] I provide one example of this in the R-code file. I include another to show the impact of Urban_Rural on race as well. Incidentally, stripping income out of the models in Figure 15 does something similar.
[59] These models are also Ordinary Least Squares.

	Dependent variable: Days Total			
	(3) All Respondents	(4) Resilient Citizens	(5) All Respondents	(6) Resilient Citizens
Income	**0.454*****	0.172	**0.463*****	0.322
	(0.121)	(0.771)	(0.124)	(0.826)
Education	0.045	-0.237	-0.063	-0.541
	(0.226)	(1.542)	(0.231)	(1.618)
Black	**-3.025****	-8.859	**-3.512*****	-8.794
	(0.967)	(7.397)	(0.985)	(8.723)
Asian	**-4.192****	-15.466	**-3.570***	-16.839
	(1.579)	(23.688)	(1.637)	(23.702)
Alaska Native/Am.	0.529	-5.244	0.815	-5.925
	(2.132)	(11.793)	(2.161)	(11.817)
N. Hawaiian/Pac.	4.566	23.812	**7.312**$^{+}$	22.446
	(3.147)	(16.529)	(3.829)	(16.560)
Hispanic	**-4.011*****	4.003	**-4.453*****	-1.746
	(1.203)	(12.393)	(1.241)	(14.951)
Urban to rural	**0.885*****	1.246	**0.861*****	1.058
	(0.155)	(0.765)	(0.158)	(0.780)
Female	**-1.796****	0.053	**-1.592****	0.425
	(0.555)	(2.122)	(0.561)	(2.195)
Margin Trump			**0.028**$^{+}$	0.064
			(0.016)	(0.113)
Constant	8.897***	71.345***	8.995***	72.072***
	(1.471)	(9.877)	(1.487)	(9.950)
Observations	2,582	119	2,486	112
R^2	0.037	0.061	0.042	0.060
Adjusted R^2	0.034	-0.017	0.038	-0.034
Residual Std. Error	16.203 (df = 2572)	22.963 (df = 109)	16.143 (df = 2475)	22.962 (df = 101)
F Statistic	11.094*** (df = 9; 2572)	0.786 (df = 9; 109)	10.770*** (df = 10; 2475)	0.640 (df = 10; 101)
Note:				$^{+}$p < .1, *p < .05, **p < .01, ***p < .001

Figure 15: Regression Results (Days Total Continuous; All Respondents and Resilient Citizens)

Now look at Model's Four and Six, which query only resilient citizens. Note that not a single variable is significant although many are substantial. Take for example Model Four and Native Hawaiians/Pacific Islanders with a nearly 24-day impact on the dependent variable and recall Figures 3 and 4. What to make of this? There are some possibilities. First, there could be omitted variable bias; some other factor (or factors) is responsible for changing people from regulars to resilient citizens – or Highly Resilient Citizens, or Ultra-Highly Resilient Citizens – that is uncaptured here. Second, the number of observations is small and (recall Figure 2), there are definitive counts at certain days (e.g., 60, 90, 97) so the lack of clarity in Model's Four and Six may require more data points. Race, income, and where someone lives impacts days of preparedness, but once you cross the threshold into resilient citizen territory, we do not yet know how much. Food for thought for future analysis.

IV. Conclusion

Neither journalistic nor academic endeavors over the course of four decades have accurately counted the number of extremely prepared individuals in the past using a methodology that was reliable, valid, and falsifiable. This has led to significant trouble. The Dominant account of preppers is one of masculinity, racism, low-education, and selfishness, among other unfavorable portraits. The Challenger view, especially over the past ten years, picked away at some of this by showcasing exceptions to this depiction. However, both parties suffered from the same common flaw: a selection bias that lacked much external validity. The root problem to each was a lack of randomization and quantification as well as a falsifiable definition. Could the various groups studied be compared to each other? Just how

representative were these various depictions? It was as if doctors were discussing a health issue, but could not agree upon symptoms, causes, prevalence, or a diagnosis.

I have endeavored to improve the record. Although the designation of the term resilient citizen requires more theoretical development, its use so far here provides not just a baseline count of how many extremely prepared citizens there are in the United States, but also allows a more accurate depiction of their composition. From the data collected by FEMA, what stands out is not how different resilient citizens are, but how much closer to the average in several respects. Far from being total aberrations, resilient citizens are in many ways just like everyday Americans. They have approximately equivalent incomes, levels of education, and prevalence of disability in line with their regular counterparts. They are also just as likely to be concerned about their neighbors after a catastrophe. Also, roughly one in eleven do not speak English at home as their primary language.

On the other hand, resilient citizens are less likely to rely on public transportation and are more likely to take risk mitigation measures regarding evacuation or financial set-asides. They are slightly more likely to be white. Yet other racial groups exhibit sizable means of preparedness, especially Native Hawaiians and Pacific Islanders (although this might be due to low counts in the 2017-2018 data). Resilient citizens act financially, both in emergency savings rates and amounts, in ways that separate their actions clearly from regulars.

Overall, these findings are threatening to the Dominants' narrative. While there are undoubtedly groups of extremists among resilient citizens (and regulars), the broad brushstroke stands on shaking ground. While the Dominant view could have been accurate in a previous timeframe, it does not seem to hold for the years of 2017 to 2018. Challengers come out much

better as these findings bolster their inquiries into individuals and subsets who did not fit the prominent descriptions. The global disaster of COVID brought forth both the logic, and the benefits, of individual and household prepping, even for longer-term and larger scale events. This rediscovery of resilience may be transitory, but for now will most likely feed into a growing movement of disaster minded people. I stand with the Challengers.

Further research on extremely prepared individuals is promising. Chapter Three contains a methodological development to advance a theory on defining preppers, one that excludes extremists while also explaining some of the confusion and equifinality of their composition. There may also be interesting insights as to why Native Hawaiians and Pacific Islanders prepare at higher levels than all other racial groups,.[60] Chapter Four expounds on one supposition. FEMA's release of their 2019 NHS data should also be of interest. With three years of data, perhaps trends can be deduced as to the increase or decrease of the number of resilient citizens and their composition. These three years could potentially serve as a baseline of comparison if COVID-19 radically changes American – or international – perceptions on prepping. Or it could reveal an economic bifurcation where well-off (or well-prepared?) individuals weathered the pandemic comparatively better than others.

Additional international inquiries are necessary as well to see if different countries or regions have higher or lower levels of resilient citizens and if their demographics are commensurate with these American findings. Just like states were compared in measures of civil defense during the Cold War, the individual preparedness of citizens might be a measure of state stability. If true, studies into this field could shed light on the health of the liberal world

[60] See Chapter Appendix.

order or human security by giving insights as to how states can encourage resiliency in their domestic populations. If the logic of individual preparedness also confers a state level benefit, this would be highly beneficial to know from policy, economic, and security standpoints. Furthermore, given the current pandemic and related fiscal turmoil due to skyrocketing public and private debt levels, this seems to be a needed endeavor.

Chapter Appendix

As indicated earlier, the 2017 FEMA National Household Survey was not as representative as the 2018 survey, so its data is a bit more suspect for my work here. The survey sample was still sizable (N = 5042) but the oversample composition was nearly 80% (N = 4036) and as indicated previously, did not include US island territories (Puerto Rico, Guam, US Virgin Islands). Given those limitations, the 2017 data is still generally supportive of the case made *supra*. For corollary information compared to Table 2, Table 3 below shows the three resilient citizen groups using the 2017 data. I hesitate to declare trends with just two years' worth of information and insufficient (usually single digit) cases among minority responses. For example, the 2018 data showed no UHRCs among Asians, American Indian or Alaska Native, and Hispanics. Yet the 2017 had members of the latter two racial sub-categories.

	White	Black	Asian	American Indian or Alaska Native	Native Hawaiian or Pacific Islander	Hispanic
Resilient Citizens	81.5	6.9	1.1	3.7	1.6	2.1
HRCs	71.3	7.0	N/A	3.5	2.6	2.6
UHRCs	79.7	5.1	N/A	5.1	2.5	3.8

Table 3: 2017 Tabulated statistics of various groups by percent

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CHAPTER THREE

Gales, Guns, God, and Government: Using Ontological Security to Explain Disaster Prepping

I. Introduction

"The world is a dangerous place."
(Sims & Grigsby, 2019)

What explains variation in individual disaster preparedness? I argue the variety of hazards[61] and perceived threats, from small scale to global and from historical to future, combined with government interplay, contributes to the diversity seen in those who prepare for a disaster, even at extreme levels. The logic of individual time probability remains at play, but the manifestation of mitigation and preparedness actions is wide-ranging, and sometimes even mundane.

In a time of global crisis, the world can be a scary place, and some cannot have enough toilet paper to survive (Garbe et al., 2020; Goode et al., 2020). COVID-19 and other pandemics are just one of the many types of catastrophes that have reverberated across borders. Droughts, terrorism, economic collapse, interstate war, pollution, and other natural and manmade calamities have had a multinational impact. Supernatural fears can also play a part as many belief systems prophesy the end of the world. Disasters can be regional as well; droughts, floods, civil war, and heat waves may all lie within a single country's borders. Scaling down, they can even be solely individual. A tornado can obliterate one home and leave others unscathed; a lightning strike could kill a hiker yet spare her companion; and of course, one's eternal soul may reside in the hands of an angry (or merciful) deity. Add to this mix crime, civil unrest, or even accidents such as chemical spills or massive wildfires sparked by a smoke machine at a gender reveal party (Morales & Waller, 2020) and you have the makings of a

[61] The formal definition of these words was given in Chapter Four. However, for this chapter I use the terms in their general English sense unless otherwise specified.

sense of general unease.

In all of these cases though – from singular to regional to global – what does *not* change is that the impact of these assorted threats falls primarily on flesh-and-blood people. A focus on the individual, based on these events, is human security distilled to its very essence. Because of ensemble probability, while countries can be resilient to various shocks and can withstand years or even decades of abuse, people are comparatively vulnerable. A mudslide can demolish an entire town, a nuclear bomb a city, and a genocide can decimate an ethnicity, but the nation remains. And, while states can mitigate disasters to various degrees via building codes, laws, vaccines, international agreements, and rapid response, they cannot prevent the harm from all events. Governments are powerless to stop earthquakes or Armageddon.

Scholarly articles on disaster's many contours, political effects, and individual impact issues even outside a human security focus are pervasive. COVID-19, while new and worldwide, is just one of the many disasters discussed. For other recent examples, the 2004 Indian Ocean tsunami caused political impacts on incumbent governments and voters in Denmark and Sweden (Rubin, 2019). Like Chernobyl and Three Mile Island, the 2011 failure of the Fukushima Daiichi nuclear power caused environmental calamity regionally and public backlash regarding nuclear safety in countries half a world away (Downer, 2014; Sanchez, 2017; Welsch & Biermann, 2014). Nearly a decade on, Fukushima is still contributing to ecological decay and diplomatic strife. In October 2020, the Japanese government approved the release of 1.2 million tons of radioactive water into the Pacific Ocean, causing concern among local fishers, experts from the United Nations, and Greenpeace (Degnarain, 2020; Woodyatt & Wakatsuki, 2020). There are also apprehensions regarding climate change (Aklin & Mildenberger, 2020;

Colgan et al., 2020), financial crises (Helleiner, 2014; Lipscy, 2018), and countless writings on current or potential armed hostilities. Journals and books from multiple disciplines from geography, public administration, political science, criminal justice, and many natural science tomes are replete with theories, models, and histories of war, famine, plague, and every other disaster under the sun.[62]

How and why people cope with this reality can be explained by insights from psychology, especially the concept of ontological security (the security of self). Ontological security refers to a state of *perceived* being. When an individual *feels* ontologically secure, they have reduced uncertainty in life, manageable levels of anxiety, stability to establish routines and resist change, and can exercise their agency (Giddens, 1991; Mitzen, 2006). Catastrophic shocks can threaten one's ontological security, so it must be reinforced via recursive action and community. Government mitigation, preparedness, response, recovery actions, and legal structures also come into play and serve as a variable in an *individual's* calculation of mitigation and preparedness activities. Often, it is a sense of government failure that prompts people to increase disaster resiliency. But personal ability is also diverse, given differences in culture, knowledge, class, locale, beliefs, income, and gender. Therefore, variation of preparedness is immense.

A rudimentary model can assist in this conceptualization as Figure 1 shows. The bold solid arrows indicate primary paths in which governments can reduce disasters and their

[62] Although in the political science subfield of International Relations, Lipscy argues many disasters are relatively neglected due to the discipline's bifurcation into International Political Economy (which looks at financial crises) and International Security (which looks at military crises) and neglects those disaster that fall outside these two categories (Lipscy 2020).

consequences (e.g., a mandatory evacuation order preceding a hurricane), but the dashed line shows not all can be aborted. There is then a feedback loop, reflection upon the disaster itself (or disasters in general), and also both reflection and direct feedback on government by the people.

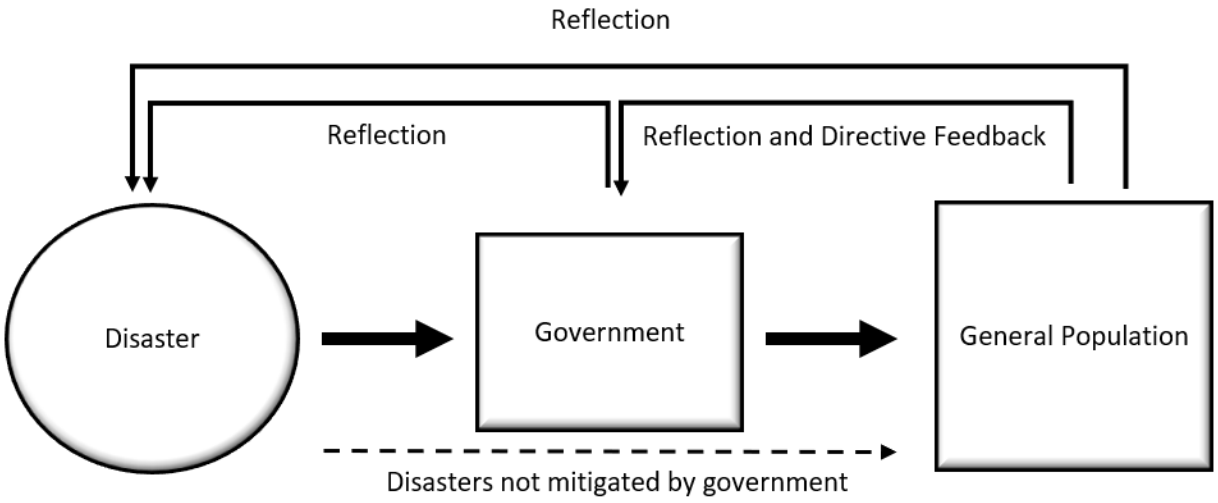

Figure 1: A Basic Model of a Disaster Loop

This model is oversimplified to give a base understanding, but disasters, governments, and people are not homogenous. On the contrary, they have sizable differences so we should *expect* variation of response and future planning both at the government level, but also in the general population as a reflection of myriad calamities. As my focus is on individuals, I only tangentially cover government operations in the face of disasters.

At one extreme, some individuals never reach stability and remain in an ontologically *insecure* state. Others prepare at low or middling levels. At the other end of the spectrum though are those that extensively prepare for disaster, far beyond the average citizen. To add even more complexity, certain end states of high resilience can be prompted by radically different disasters. Vivos, a survival bunker company, lists myriad catastrophes such as an

electromagnetic pulse, martial law, or an economic collapse that may propel citizens to purchase a fortified structure to survive (Garrett, 2020b). And yet the motive force for all who do prepare is the desire to attain a state of ontological security.

Scholars have tied ontological security to populist movements in Europe (Steele & Homolar, 2019), Brexit and threats to the European Union (Kinnvall et al., 2018), the "crisis of the liberal international order" (Flockhart, 2020), and states acting within the security dilemma (Mitzen, 2006). They have also applied it to the current COVID-19 pandemic. Government edicts such as lockdowns leave people "trapped in worlds which are familiar yet just different enough that they cling to the select few routines they consider essential to their identities" and how citizens in different nations deal with the COVID shock via ontological security is based upon the history of their respective countries (Goode et al., 2020). In this and related crises, "the English panic buy frozen chips, [the] Russians panic buy buckwheat, [and the] Americans panic buy handguns."

Hoarding is a psychological and cross-cultural response as well. *Hamsteren*, previously a jovial Dutch word to indicate stockpiling as in "stuffing food into your cheeks like a hamster," has nowadays gained a negative connotation, much like the similar German word *Hamsterkaufen* and was equated with selfishly over-caching needed supplies (Goode et al., 2020; The Economist, 2020). When the COVID pandemic began in Asia, toilet paper hoarding started early. In Hong Kong, armed thieves robbed a deliveryman of 600 rolls (Goode et al., 2020). A widespread survey of 22 countries could trace 19% of the differences in toilet paper purchases post-COVID to feelings of individual anxiousness due to the perceived threat (Garbe et al., 2020). Yet hoarders react *after* a crisis hits (or immediately before, provided enough

early warning). Toilet paper hoarding happened again during COVID's second wave as governments returned to lockdowns in America,[63] Germany,[64] and Britain.[65] Another animal metaphor used is that of an ostrich. It is referenced both in a negative sense – a head in the sand – and as an adaptation; since ostriches cannot fly like most other birds, they have developed land-based skills to survive (Meyer & Kunreuther, 2017).

Common but relatively low personal and household preparedness levels (typically three days or less) has a rich legacy of theory and data. But academic work is comparatively lacking – "shallow and unreliable" as one recent author described it – in one area, that of extremely prepared individuals (Barker, 2019; Mills, 2019b). This is partially due to the topic previously being on the academic "fringe" (Christian, 2017), although that designation is under contestation (Mills, 2019b). These individuals, known by many names, but recently by the nomenclature "prepper," are people who take a variety of active steps to prepare for future disasters at levels often far beyond official recommendations of 3-14 days. Preppers are fundamentally different than hoarders since they gather supplies long *before* disaster strikes. Within this subfield, methodologically, the work is almost exclusively based on interviews, data gleaned from prepper websites, or by film and television review. Quantification is nearly absent and theorization lacks comprehensive scope and agreement. This has led to massive confusion and conflation of terminology. Hoarders, preppers, survivalists, militia members, and hate groups are all commonly lumped together (Foster, 2014). Not only is this inaccurate, but it

[63] https://www.8newsnow.com/news/local-news/hoarding-part-2-toilet-paper-bottled-water-flying-off-the-shelves/ and https://abc7.com/hoarding-toilet-paper-shortage-towel-state-bros/7649903/.
[64] https://www.forbes.com/sites/siladityaray/2020/10/22/germans-are-panic-buying-toilet-paper-and-disinfectants-as-covid-19-surges-again/?sh=ec3533817f07.
[65] https://www.dailymail.co.uk/news/article-8901407/Shoppers-strip-shelves-toilet-paper-household-essentials-ahead-national-lockdown.html.

is also dangerous with regards to encounters between law enforcement and some utterly non-threatening citizens (Imel-Hartford, 2013). It has also negatively impacted researchers' abilities to get these individuals to agree to be subjects of study as many fear stigmatizations (Campbell et al., 2019) or the unfair labels of being "selfish or 'tin foil hat wearing loonies'" (Barker, 2019).

Unfortunately, the fusing of prepper/survivalist/militia et al. has been the overriding position since the 1970s. This mixing is grounded on some truth and the fact that the groups can often share certain survival-based traits. But it is a classic example of the fallacy of composition (inferring to all the attributes of a few), or Fundamental Attribution Error (the overemphasis of personality explanations at the expense of environmental pressures), or both. For over forty years, a journalist and academic group I introduced in previous chapters as "Dominants" have approached the extremely prepared crowd as synonymous with extremism, for example, white nationalists, cultists, or the psychologically unbalanced (Coates, 1987; Gonowon, 2011; Lamy, 1996). Their opponents – "Challengers" – are far fewer in number but have pushed back, especially recently, against this depiction stating preppers are qualitatively different from extremists. While they may share some characteristics in preparedness, the two are not the same in many beliefs or motivations. Challengers acknowledge that extremists exist, but preppers should not be assimilated within them. The historical cleavage, while using many terms, is one between "big-S" Survivalists (i.e., extremists) and "small-s" survivalists (i.e., preppers) (Coates, 1987). Challengers say that preppers, as far as their aggregate composition, are closer to the mainstream, i.e., soccer moms, college graduates, ordinary people.

Yet even in the Challenger literature, clear separation – not only from extremists but several other groups as well – remains a struggle. Part of the reason is that both sets of writers

(Dominants and Challengers) have mainly constructed their methodologies around qualitative approaches such as Grounded Theory or snowball interviewing techniques that do not provide a broad enough swath of cases. Media depictions also lack clarity. This leads to even self-proclaimed preppers and survivalists having muddled views on terminology. A recent study discovered that just 26% of those classified as survivalists by the researcher also identified themselves as both preppers and survivalists (Wallace, 2020). Wallace conjectured differences in motivation could be a possible explanation. Of additional note, writers on the Dominant side concentrate on American subjects, whereas Challengers have more of an international flair. America still receives the bulk of coverage though, collectively, and is the only country to sustain a sizable cottage industry tailored to larger-scale prepping (Mills, 2019b). However, the United Kingdom is gaining ground (Barker, 2019), as is Australia (Garrett, 2020a).[66]

This chapter has a single main contribution to help make sense of all this variation, with two supporting arguments to bolster the central claim. The key takeaway is a holistic, taxonomical model of disaster preparedness that *connects and separates* those who prepare at extreme levels to everybody else and uses ontological security theory as its driving force. The literature on calamity is exceptionally vast and includes commentary on victims of disaster, the less prepared, inequality of preparedness, government actions (both domestic and external), or disaster predictions and repercussions – including ecological, political, and individual impact. Comparatively, research on highly resilient people is sparse and what does exist is contested. My primary injection is at this extreme end. What is needed is a sorting, which ties groups

[66] See www.facebook.com/AustralianPreppersNSW/ and www.aussiestormshop.com.au/preparedness-prepping/. It remains to be seen if COVID will induce a sustainable interest in prepping in other countries.

together yet provides at least an initial attempt at defendable cleavage points. The field of study regarding extremely prepared individuals is muddled and clarity is required. While dozens of works have pointed to the vast number of hazards and threats and how they impact extreme preparedness, my piece utilizes this diversity of *input* as an explanatory criterion for diversity of *output* within an overall model and theory. The first supporting argument is a historical reevaluation of the debate between the Dominants and the Challengers. The preponderance of my work here sides with the Challengers, and yet I find that while ontological security explains the depictions portrayed for both sides, delineative criteria are needed for lucidity on the subject. This leads to my second supporting argument, a typology. This provides an understanding of the diversity of preparedness that explains in part the equifinality of pathways to arrive at these highly resilient states, including why we see large intersections. The typologies therefore assist in comprehension. If we can understand high level disaster preparedness, and if states, scientists, and academics argue large disasters are part of habitual human existence, perhaps we can find the blueprints to encourage greater resiliency without also emboldening negative fallout such as anti-government sentiment.

Gaps, research design, and overview

Previous works on preppers, survivalists, et al. mainly fell under the methodological category of *narrative* (Herrera, 2006).[67] While case studies and interviews are critical, they can suffer from selection bias since their population studied is not random. Both the Dominant and

[67] Formally, Herrera says narrative "can mean ethnography, discourse analysis, case studies, or any analysis of data that has not been formalized through quantification."

Challenger positions fall prey to this flaw. Alternative approaches identified by Herrera, such as *quantitative analysis* and *non-formal theory,* are in short supply in the literature for this topic when looking at broad explanations or descriptive statistics. Herrera finds such singular approaches in the social sciences to be left wanting; what is sorely needed to advance the discussion on extremely prepared individuals is three-fold.

First, there needs to be rigorous quantification and descriptive statistics to identify cases. This, by far, has been the weakest link in over forty years of research. At least for America, my recent attempt used data gleaned from two large-n surveys conducted by the Federal Emergency Management Agency (FEMA) (see Chapter Three). That analysis indicated that highly prepared individuals – designated as *resilient citizens*,[68] someone who could last at home without publicly provided power, water, or transportation for 31 days or more – were far more of a crosscut of regular Americans than commonly portrayed. It also gave a testable criterion, days of survivability, that no other work had done before. One cannot understate the need for a hard number since even basic terms are under contestation. A catholic definition of prepping is "*a practice of anticipating and adaptating (sic) to impending conditions of calamity, ranging from low-level crises to extinction-level events*" (Garrett, 2020b). Using this definition, an American following FEMA's guidance to have three days of emergency supplies at home is engaged in prepping. However, others define prepping as an activity that is "more intense" than this short-term horizon "*with preppers being distinct in their concerns towards 'threats' beyond natural disasters (potentially including terrorist attacks and international wars) and the prospect of medium-to-long-term survival*" (Mills, 2019b). The 31 days designation, therefore,

[68] A term borrowed and expanded upon from Huddleston (*infra*).

follows the spirit of Mills' definition (as well as the bulk of writing on this subject) but gives it some quantitative "teeth," so to speak. Also, as indicated by my work in Chapter Three a private actor is a civilian. All state actors (politicians, military members, bureaucrats, etc.) whose official position gives them access to 31 days of government resourced provisions are excluded.

Second, the field lacks a unified theory, an undertaking others are loath even to attempt (Mills, 2019b). No one thesis comprehensively accounts for a) the full diversity of individual preparedness, b) a mechanism to tie threats to action, c) one that connects both to those who brace for disaster at lower levels of readiness, and d) excludes those with extremist ties, even though some overlap exists. For example, it has been over 20 years since any researcher has attempted to categorize, holistically, these groups of highly prepared individuals against each other beyond just a prepper/survivalist/extremist split. Just as the English, Russians, and Americans have differences in their hoarding, so do preppers in their prepping. Methodological guidance from the Brady and Collier compendium indicates one tool to bridge the quantitative-qualitative divide is to utilize "quantitative data as a point of departure for qualitative research" (Tarrow, 2010). Additionally, Collier et al. state – contra to King, Keohane, and Verba – that typologies can be exceptionally useful as tools for explaining (Collier et al., 2010). Accordingly, given that a) the emergence of the term "preppers" came about, in part as a reaction to the great financial crisis of 2007-2008, and b) numerous media reports and scholarly pieces up to the present day still conflate terms, it is time to revisit the typology and schism of these groups. I therefore maintain and expand the term *resilient citizen* in this chapter; prepper is generic, *resilient citizen* is exacting.

A third shortfall in the literature is the dearth of data – either quantitative or qualitative – outside of the United States. Therefore, this chapter dedicates considerable space to dissecting over four decades of commentary and debate regarding extreme preparedness in the US alone since it serves as a baseline. While some researchers conduct studies or interviews in Europe, Australia, New Zealand, and elsewhere, they are the exception, not the rule. Therefore, my model and theory should apply, at least to developed countries, without modification. Further research is required to adequately test this assumption. While my work does not overcome that deficit in international data, I do incorporate the available information. I argue the overall theory of ontological security and examples via five resilient citizen heuristic subtypes (*Homesteader, Faithful, Sentinel, Interdependent, and Noah*) expounded on below can extend internationally. These five species serve as examples and are culled from the available survivalist and prepper literature, both academic and journalistic. While other subtypes exist, these five provide a broad enough swath to support my ontological security conjecture regarding those who prepare at extreme levels.

Combining everything in this chapter, I take the previous narrative and quantitative analysis and add non-formal theory in two ways.[69] First, I proffer an overall theory, ontological security, that connects disasters to various levels and methods of preparedness – from hoarder to white supremacist to prepper, and all the rest. I first test this historically against the long raging debate between Challengers and Dominants. While some academics utilized Grounded Theory to discuss why and how preppers get ready for disaster, they were often a list of shared,

[69] Herrera states "Non-formal theory encompasses any abstract thought, philosophy, or set of rules, principles, beliefs, or ideas which has not been formalized into mathematical language."

but not universal, features. Not all people who prepare are preppers, but neither are all gardeners, gun owners, farmers, militia members, cultists, or billionaires, even though they may share some characteristics with the prepper genre. Clearly, there are issues of designation that, without proper sorting, only lead to confusion.

Second, for further clarification, I then use others' work as a jumping-off point to develop and proffer a heuristic of resilient citizens' classification, aggregating diverse sources of previous (primarily narrative) research in this field. These measures are benchmarks or screening criteria. As a start point, I use Criterion One as a cleavage marker to separate *resilient citizens* from *regulars*. Resilient citizens have 31 days or more of survival means; regulars do not, as developed in Chapter Two.

Criterion One, Longevity: a resilient citizen is a private actor who can survive for 31 or more days at home without publicly provided power, water, or transportation.

For the sustenance portion, these 31 days can be achieved via on-hand packaged supplies, home-grown or home-raised stocks (e.g., gardens or livestock), or a belief in sufficient survival skills (i.e., "bushcraft"). This depiction subsumes several elements within the prepper communities. To be considered among the ranks of resilient citizens, one must also meet additional criteria:

Criterion Two, Foresight: the private actor must meet Criterion One based on an assessment of disaster risk and a paired response to that risk that is executed well in advance.

As I spell out in Section Three, this criterion eliminates certain individuals who may have high levels of disaster resiliency, not based upon any disaster prodding or fear, but simply by their position or assets. Crewmembers of the International Space Station may be totally self-

sufficient for six months, but they have that capability not due to fear of a volcanic eruption or civil war, but rather because of their job.[70] Hoarders could bulk purchase granola bars, peanut butter, bottled water, and plywood a few days prior to the impact of a hurricane, but they would not be considered resilient citizens, or even survivalists or preppers. As given in the definitions above, preppers engage in more of a lifestyle choice analogous at the very least to a serious hobby. It is not a spur-of-the-moment endeavor. A criterion is needed to reflect this and one that is robust enough to handle the variety seen. This is where "paired response" comes into play, the actions taken against a threat or collection of threats to achieve and maintain ontological security.

I argue ontological security explains Criteria One and Two. Criterion One deals with the *how much*, Criterion Two with the *why* and *how*. Additionally, to strip out entities such as hate groups or extremist anti-government members and defend the Challenger proposition that preppers are more mainstream, moderate, inclusive, community-supportive, and normal (Bounds, 2020; Huddleston, 2016; Imel-Hartford, 2013; Lindsay, 2015), I add a final criterion.

Criterion Three, Creed: an individual must not participate in extremist organizations or activities as defined by the United States military.

This chapter's Appendix A provides the United States Army's statutory language, as an exemplar, for the types of beliefs and ideologies incompatible with military service. While many Challengers have argued preppers are distinct from a larger group, including survivalists and extremists, none have done so with such a clear-cut partition and even Challengers

[70] Of course, they would also be removed from designation as a resilient citizen because they are not private actors.

disagree as to where the dividing line is located. Some may object to using US military standards since I am also applying my theory to an international setting. However, the US military accepts foreigners into its ranks, provided they are lawful permanent residents (i.e., they live in the US and possess a Green Card).[71] Tens of thousands of noncitizens have served America in uniform and it greatly assists in the US naturalization process.[72] Given that the US military accepts a cosmopolitan array of people from around the world, but with strict standards as to unacceptable dogma (i.e., one cannot be a member of ISIS or a staunch supporter of the Irish Republican Army), I believe it is an appropriate benchmark.

Taking the three criteria together, a resilient citizen is *a private actor who has taken paired steps in advance, directly relating disaster risk to disaster preparedness, to increase their household resiliency to a level of 31 days or more and espouses no ideologically extremist views.* I continue utilizing resilient citizens as a formal designation and preppers as an informal variant due to its popularity. However, my use of the word prepper ties it far more to the Challenger viewpoint than the Dominant's depiction.

This chapter has three limitations. First, my discussion on government action to encourage or discourage preparedness is very light. Numerous countries (Sweden, Canada, America, Japan, Switzerland, and others) provide formal guidance to citizens on steps they should take to increase resiliency in the face of generalized or specific disasters. Furthermore, laws related to firearms possession, access to private land, and raising chickens in one's

[71] https://www.usa.gov/join-military.
[72] Numerical data can be found here https://immigrationforum.org/wp-content/uploads/2018/02/VNA-Fact-Sheet.pdf and here www.migrationpolicy.org/sites/default/files/publications/MPI-Noncitizens-Military-Final.pdf. The Migration Policy Institute (https://www.migrationpolicy.org/) has several works on this subject. As to naturalization, one can visit the US Citizenship and Immigration Services website (https://www.uscis.gov/military/naturalization-through-military-service) for details.

backyard, just to name a few, are a mosaic. Regulations involving such things surely hold some sway on individual preparedness.[73] Second, whereas the literature is scant for highly prepared individuals, there is a plethora of information on low levels of preparedness (commonly three days of disaster supplies or less), even internationally, including a host of work on why people *fail* to prepare. Many country's respective disaster agencies pursue inquiries into disaster knowledge, fears, resources, obstacles, and state assistance expectations. While there are idiosyncrasies, it is enough to say that, generally speaking, those who prepare even at low levels do so to achieve or maintain a state of ontological security. The low- and no-preparedness research is saturated. Finally, and closely linked, since my focus is on those who are highly prepared, I do not spill much ink on various categories of the less- or non-prepared other than a few generic groupings. Even with such limitations though, I find that ontological security and the general model I proffer is strong enough to approach a grand explanation of the subject at hand.

Going forward, the piece proceeds as follows: in Section One, I describe how psychology provides insights into preparedness at all levels and tie it to a general model. The desire for ontological security drives people to take action, and beyond that, matches threat to prophylactic response. In Section Two, I provide an abbreviated history of common origins of terms such as survivalists, preppers, etc., in a strictly American context. I review past and modern writing on the subject and bifurcate them along the primary division: Dominant and Challenger. This section also covers previous attempts at typology. It indicates their incompleteness, either in tying into regular citizens at various lower levels of preparedness,

[73] I hope to revisit this topic in later research.

disambiguating among the more highly prepared groups, or lacking a basis to exclude extremists. Section Three incorporates my three screening criteria and integrates both historical and recent works to catalog several species of resilient citizens: *Homesteader, Faithful, Sentinel*, *Interdependent*, and *Noah* as an initial heuristic guideline. While most data are still American-centric, I do include international examples, where available and appropriate. This collective work has the added bonus of bringing parsimony to this burgeoning field as well as explaining some of the equifinality that has to date made study of the subject so difficult. I hope this allows others to utilize a more tightened and specified language to discuss related but not identical groups.

II: Political Psychology and a general model of preparedness

A. The Interplay of First Image Reversed, Uncertainty, Ontological Security, and Risk

In 1978, Peter Gourevitch flipped upside-down a portion of Kenneth Waltz's theory of international relations. Whereas Waltz argued in his "second image" that the domestic makeup of the state dictated its actions on the international stage, thus making domestic politics an independent variable, Gourevitch claimed the "international system is not only a consequence of domestic politics and structures but a cause of them" (Gourevitch, 1978). That is to say: the world impacted the state. Gourevitch coined this the "second-image reversed" and used it to argue for a better framework where a state's position (either weak or strong) was in some way dictated by the international system. The natural question that arises from this is: if the second

image can be reversed, can the first also?[74]

One pair of authors claim yes. Framing the discussion in the growing utilization of political psychology in International Relations (IR) studies, Kertzer and Tingley make a case for "first image reversed." Within political psychology, the first image reversed framework "inverts the analytic focus of the subfield from micro-micro causation to macro-micro causation: from the effects of actor-level characteristics or individual differences on attitudes and behaviors to the effects of environmental forces on actor-level characteristics" (Kertzer & Tingley, 2018). While not a renaissance, there was at least "a rise in micro-level approaches in IR and political science more generally" caused by events such as 9/11, the wars in Iraq and Afghanistan, Brexit, and the election of Donald Trump (Ibid). Individuals seem to matter again somewhat. Their cognition, emotions, biases, and agency became topics of greater study in analytic eclecticism's variegated fashion (Sil & Katzenstein, 2010).[75] Uncertainty is a critical component of a crisis (Lipscy, 2020). Fears of economic collapse, pandemics, war, despotic governments, and civil strife can be internalized even if thousands of miles away. This is true especially in modern countries where news, television, and the internet can make far away hazards feel closer (Nellis & Savage, 2012; Van Belle, 2000). Mills found media coverage of adverse events (e.g., Ebola, ISIS, Hurricanes Katrina and Sandy) were *more* of an initial catalyst for preppers

[74] For those unfamiliar with Waltz's three images, his first image states that war is caused by man's nature or behavior.

[75] How committed political scientists are to disaster study at the individual level, especially in the international relations field remains contested. Even with this renewed interest and a differing direction of approach, study from political scientists seemed stuck in the normal ruts of topics such as war, conflict, state level politics, and state action. Prior to COVID, the allegation is that disasters, particularly natural and technological disasters (with the clear exception of climate change), remain understudied by political scientists. As an example, Choudhury found that of all articles published on the topic of disaster studies and catalogued by the Social Science Citation Index from 1951-2010, only 1.2% were from political scientists (Choudhury 2013).

than personal experience with a disaster. He noted official government warnings and proclamations for personal preparedness were also driving factors (Mills, 2019b). Therefore, I believe Kertzer and Tingley's first image reversed argument can be extrapolated to form the start point for both regular and extreme disaster preparedness. Merging it with psychology in general and ontological security specifically provides explicitly a way to understand highly prepared individuals.

Whereas ontology is the philosophical study of being, ontological security is "the security of the self" (Mitzen, 2006). In her heavily cited piece regarding ontological security in International Relations, she writes:

> "Ontological security refers to the need to experience oneself as a whole, continuous person in time — as being rather than constantly changing — *in order to realize a sense of agency* (Giddens, 1991; Laing, 1969: 41–2*). Individuals need to feel secure in who they are*, as identities or selves. Some, *deep forms of uncertainty threaten this identity security*. The reason is that agency requires a stable cognitive environment. Where *an actor has no idea what to expect,* she cannot systematically relate ends to means, and it becomes unclear how to pursue her ends. Since ends are constitutive of identity, in turn, *deep uncertainty renders the actor's identity insecure. Individuals are therefore motivated to create cognitive and behavioral certainty*, which they do by establishing routines" (emphasis added).

The opposite of ontological security is ontological insecurity, which "refers to the deep, incapacitating state of not knowing which dangers to confront and which to ignore, i.e., how to get by in the world. When there is ontological insecurity, the individual's energy is consumed meeting immediate needs" (Mitzen, 2006). First described by psychiatrist Ronald Laing and later expounded upon by Anthony Giddens, ontologically secure individuals "can take the 'knocks and bumps' of normal life" whereas those without it are "overwhelmed by anxieties" triggered by various events in the world (Flockhart, 2020). Citing previous research, Flockhart

found “crisis, or disruptive events . . . will eventually produce a sense of anxiety and insecurity *about the future* – even without physically threatening the lives of the agents in question” (emphasis added).[76] Stated differently, even foreign (geographically speaking) threats that have just a minuscule chance of any personal impact still can cause apprehension, both individually and collectively. This links the first image reversed argument with that of ontological security. Ontological security also connects with the greater disaster preparedness literature, especially several risk calculations; I list four here.

First, risk can be computed heuristically, cognitively, or via emotion and can be alleviated or amplified based upon governmental action or capability. “Risk is defined as a combination of three elements: scenario, probability, and consequences” (Kunreuther & Useem, 2010). Many people take little to no action. This could be due to several reasons beginning with the belief that their risk calculation product is low, either because they believe the scenario, probability, and consequences are unlikely or bear a negligible loss, or that the government provides adequate safeguards or quick relief. Similarly, some households may have confidence that minimal steps are all that is required, such as homeowner’s insurance, a small stash of emergency supplies, or an evacuation plan. For this group, their ontological security is sufficed. Another explanation is that there is an inability to act (financial restrictions, lack of knowledge of what to do, etc.). This last group of individuals will be ontologically *insecure*. Others take a far larger proactive approach. In their scenario, probability, and consequences calculus, extraordinary steps are required to achieve ontological security. In

[76] In this quote, she cites Kinnvall et al., 2018.

some cases, governments will be powerless to halt or contain certain hazards or may even cause such incidents.

A second risk calculation pathway derives from the fact that humans are biological organisms; there is a base desire to live. Our "System 1" brain (intuitive, emotional) (Kahneman, 2011) reacts to a rustle in the bushes as a lion rather than a raccoon because an overreaction is less deleterious than being wrong . . . and being eaten. One could link hoarding to System 1. Unlike animals though, humans do not rely solely on instinct but rather on reasoning (System 2). People utilize heuristics "to make sense of an uncertain world" (Slovic, 1987). He writes:

> "The ability to sense and avoid harmful environmental conditions is necessary for the survival of all living organisms. Survival is also aided by an ability to codify and learn from past experience. Humans have an additional capability that allows them to alter their environment as well as respond to it. This capacity both creates and reduces risk" (Slovic, 1987).

Slovic created an unknown risk and dread risk matrix based upon 81 different hazards ranging from nuclear weapons fallout to vaccines to home swimming pools. He discovered groups of individuals rated the perceived risk of these hazards very differently. Dread risk (a combination of items such as "perceived lack of control" and "catastrophic potential") has far more of an effect on laypeople, whereas experts see the world in expected mortality calculation distributions.[77] Concerning a first image reversed argument, Slovic reported certain events. "high signal accidents," had impacts beyond their immediate boundaries. Three Mile Island changed the face of nuclear energy globally. He noted previous research indicated that

[77] Although Slovic's data indicates at least a 70% overlap in the top 10 riskiest items between experts and any of his three groups of lay people.

Americans thought risks in the future would be greater than the present day, a finding echoed by others in industrialized nations (Ibid).

Third, and complementing the above findings, is the work done by Lee Clarke on disasters. In his book, *Worst Cases*, his "central argument is that disasters are normal parts of life – spectacular, but prosaic in their cognitive and institutional patterns" (Clarke, 2006). People think about disasters on a scale based upon three attributes: "inconceivability, uncontrollability, and social identification." The first two attributes relate to the uncertainty dimension of ontological security. The third connects to personalized implication; the *Challenger* Space Shuttle explosion, while tragic, is not as individually significant (or threatening) as a regional famine. Clarke continuously reminds his readers that thinking about disasters, even severe catastrophes, should be normal and even encouraged. Governments habitually do so and plan on failing; so, individuals should likewise prepare for the *possibility* of various extreme events (Ibid).

Finally, there is also the aspect of repeat play. There is not just one catastrophe, one robbery, or one car accident that people must overcome in their lives, but rather a series of risks. A single unfortunate event is all that is required for total devastation or death. Nassim Taleb describes this in various ways: time probability, ruin, and non-ergodicity (Taleb, 2018). Conceptually in regards to disaster, an individual is not safe for the rest of their life due to avoiding a single flood. That same person rolls the proverbial dice or spins the roulette wheel over and over. Preparedness reduces the odds of ruin, and extreme preparedness is a version of stacking the deck in your favor.

There is much to unpack thus far. The goal of ontological security is to reduce uncertainty. This is achieved, if not in fact, then at least in belief, primarily via agency. Those that feel overwhelmed or lost do not take action for the future but are instead caught up continuously in the present. In contrast, those who take action can achieve a sense of control over events and a robust psyche. This action is motivated by emotion but acted upon via cognition and choice and is recursive. Naturally then, routines are vital. Activities cannot be a singular, one-off event; they must become habitual. Mitzen notes, "a crucial requirement of a stable self-understanding is that one's actions can sustain it over time" and that from "a rationalist perspective, faced with uncertainty actors will assign probabilities and maximize their expected utility. They then update probabilities in a Bayesian fashion." There is a community aspect as well, "individual identity is formed and sustained through relationships. Actors therefore achieve ontological security especially by routinizing their relations with significant others" (Mitzen, 2006). Ontological security acts as a "protective cocoon" and is a "pre-condition for resilience" (Flockhart, 2020). Overall, the pursuit and achievement of ontological security comes from emotion and reason and is *healthy*.

Overcoming fears though is daunting. At the terminal point, it is not just disaster and uncertainty to surmount, but actual death. In the modern world, death is often "sequestered" because people are torn between a "Victorian romanticism which makes the loss of a loved one unbearable, and the twentieth-century denial that 'forbids' or at least hides death" (Mellor & Shilling, 1993). Summarizing the literature, these two authors state we attempt "to establish a reliable 'sense of self' in the context of a seemingly hostile and threatening world" and yet avoid the topic of our mortality because it makes us feel "insecure." Quoting Giddens, they

write that death has the power to "shatter ontological security."[78] And from Bauman, they say that faced with this situation; people engage in "survival strategies . . . projects geared towards ensuring their survival and the health of their bodies." Religion often plays a part in this as well. Christianity, as Bauman indicates, focuses on the immortality of the soul and the resurrection of the body (Mellor & Shilling, 1993).

B. A general model of preparedness

Ontological security and its manifestation in various prepper typologies form the core of my exposition for this chapter, so I place it in an overall model for context. Figure 2 shows this in graphical form. As an overview, a first image reversed argument provides both the initial and final steps since the model is circular.

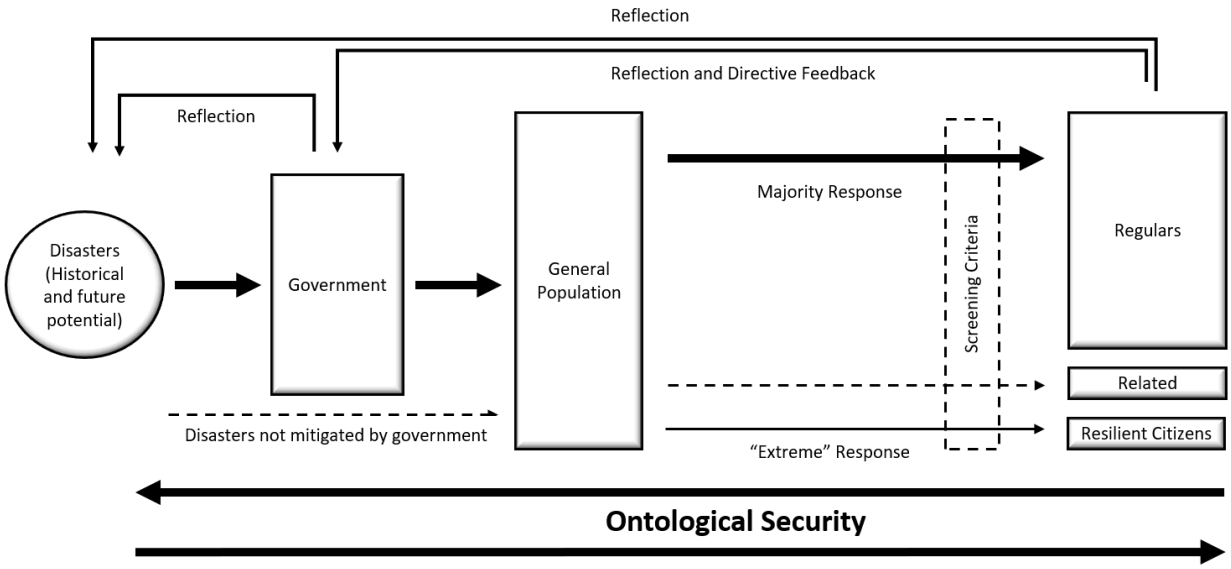

Figure 2: A General Model of Disaster Preparedness

[78] All of the quotes in this paragraph come from Mellor and Shilling's piece, but they cite Giddens and Bauman as I have depicted.

Individuals look at the world with all of its threats and hazards, both natural and manmade, locally and globally, and feel or calculate a personal level of concern. That is, the world, writ large, bears down upon every person. Some disaster shocks are historical and some of their impacts were prevented or alleviated by government action, *but not* all, as indicated by the left-most dashed line. These and other disasters can happen in the future and risk is calculated. Government's imperfect intervention – both historical and future – is indicated by the two left-most solid lines. Of note, the government can fill several roles. It can be protective (the construction of dikes, regulation, and support of vaccine development), proactive (early warning systems, critical emergency stockpiles, planning documents and disaster rehearsals, laws to reduce pollution, building codes to withstand earthquakes), informative (the promulgation of recommendations to civilians for their personal emergency resilience), inept or incapable in prevention and response efforts, and actively hostile (i.e., the source of the disaster). All except the last two are known within the hazards cycle as either mitigation or preparedness efforts.[79]

Consequently, individuals can also take mitigation and preparedness steps. With all of this though, the majority response of the general population, that of *regulars*, is to take only minor action or no action at all. They are either unable to prepare or take just small steps and perhaps gather a few survival supplies, start an emergency fund, purchase insurance, etc. Others see a far more considerable risk and opt for an intense response. Perhaps they foresee a catastrophe that government cannot prevent (e.g., a volcanic eruption) or respond effectively to (e.g., geographic restrictions in aid response or bureaucratic incompetence) or one in which

[79] Mitigation and preparedness are distinct terms, but for the purposes here, the difference is trivial.

government is the problem (e.g., debt-to-GDP levels or state-sponsored violence). Rather than being hapless victims, some act on these threats, taking steps to mitigate the world's dangers. These *resilient citizens* (just under 5% of the US population according to my work in Chapter Three) take preparedness to extremes.[80]

There is a third group in between regulars and resilient citizens. Those in the "Related" box consist of hate groups, Amish community members, high-level bureaucrats, military servicemembers, and a few other entities. With such a diverse collection it is not easy to categorize by any heuristic. But each fails at least one criterion of my theory to be resilient citizens but pass others, leading to a heretofore untidy overlap that has plagued the study of preppers and survivalists. I expound on this portion in Section Three below.

For now, what is important to know is that each of the three main groups on the right in Figure 2 all arrive at that locale via ontological security theory. As stated repeatedly, this action follows a logic of time probability, continuously present, that weighs on individual feelings or the perceived safety and agency of the agent. How exactly that process happens and what variables are influential is studied extensively for regulars, communities, and states (see for example (Tierney, 2019, pp. 167–214)). Canonical pieces for disaster modeling can be human centric (Turner et al., 2003) or government centric (Pelling & Dill, 2010), and my model incorporates their essence. However, it is beyond the scope of this chapter to evaluate these

[80] Their actions are extreme only in a deviation from the mean sense, not as a psychosocial diagnosis (Gerring 2008). For example, many people engage in running as exercise. There are those individuals who train for and compete in marathons and ultra-marathons. These later individuals are "extreme" in their running habits as compared to the average person.

measurement approaches and frameworks to see their applicability to extremely prepared households.

C. Complimentary findings[81]

Psychological ideas and previous work regarding preppers generally support various portions of my general model or the overall thrust. The evaluation phase of *prospect theory* is one example. Whereas previous utility theories had no reference point, prospect theory states actors weigh risk choices against the status quo. Additionally, humans often place too *much* weight on low probability events and too *little* on those in the medium and high range (Erisen, 2012; Kahneman, 2011). Another is the *Catastrophic Harm Precautionary Principle* developed by Cass Sunstein. Although he applies his work to governments, his findings on individuals also reinforce my contention. Just like in prospect theory, "when a risk probability is below a certain threshold, people treat the risk as essentially zero and are willing to pay little or nothing for insurance in the event of loss" (Sunstein, 2005). Unfortunately, politicians act similarly since they are rarely rewarded for proactive measures, a finding with heavy backing (Flynn, 2007; Quiroz Flores & Smith, 2013; Rubin, 2019).

[81] I limit my references in this section only to those that deal in some way with disaster. However, there are a host of additional crossover theories that relate to people seeking change in the face of challenges in which ontological security could be seen as a common thread. Three examples should suffice. First, the *Classical Model* of social movements flows as such: Structural strain → Disruptive Psychological State → Social Movement. It is "directly concerned with the psychological effects the strain has on *individuals* (emphasis in original) (McAdam 1982). Like the Dominant depiction of preppers, social "movement participants are distinguished from the average citizen by some abnormal psychological profile." McAdams demonstrates this depiction is false. Second, McAdam also discusses the *Political Process Model*. In this model, people lose faith in leaders and are originally "fatalistic" but discover a "new sense of efficacy" and "come to believe they have some capacity to alter their lot" (Ibid). Third, work on uprisings, with emotions as motivators for action (Pearlman 2013) and pleasure in the regaining of individual agency among certain insurgent groups (Wood 2003) also share a host of common themes.

More specifically, other theories support the pursuit of ontological security as key to understanding preppers, and Mitzen references two of them. The first is *Anxiety/Uncertainty Management Theory* (AUM), which finds "that uncertainty is both a cognitive and affective problem" where people desire the need to "reduce psychological stress" given a chaotic world (Mitzen, 2006). In AUM, anxiety is a "fundamental problem with which all humans must cope," and positive expectations are required to reduce uncertainty (Nishida, 2008). AUM was initially developed to explain social interactions in inter- and intra-group settings. It states one way people can reduce uncertainty in their lives is to associate with those in their own circle and avoid or minimize encounters with those outside of it (MacIntyre, 2019). While I have not seen any articles that connect AUM directly to disaster preparedness, it does align with the finding that *some* preppers are insular in nature.

The second theory referenced by Mitzen is *Terror Management Theory* (TMT). TMT has two components: "the fear of physical harm and the fear of mortality." In TMT, society acts as a "buffer" because it can survive individual death (Mitzen, 2006). Like ontological security, TMT has a kindred component which "stresses the centrality of interpersonal relations for the development of the self" (Ibid). Unfortunately for Mitzen, one scholar found that TMT is not enough to explain extremely prepared individuals since alone it suggests "people will seek to avoid any discussion of death" (Aldousari, 2015), just like Mellor and Shilling (*supra*) depicted. Fortunately, Aldousari proffered preppers tied TMT in with a *Just-World Theory* which states, "the world is just, and people get what they deserve" and "enables individuals to view the world as an orderly and stable place, which is necessary for commitment to long term (e.g., self-reliance) and day-to-day functioning." He found this "forward-looking attitude" generated

feelings of hope, an emotion and finding exceptionally common in the Challenger literature. While his theorization is supportive of my conclusions principally in why some people chose to prepare at extraordinary lengths, it lacks a mechanism to explain variation in types of preppers. Another example is the *Protective Action Decision Model* which deals with how people respond to official government warnings of impending disaster (Tierney, 2019). Agency is key here as well, but under a highly constrained timeline. Therefore, this model may be more applicable to last minute hoarders then longer temporally focused preppers.

Perhaps the best support for ontological security as it correlates to resilient citizens though comes from *Protection Motivation Theory* (PMT), another causal explanation. Originally designed in 1975 by Ronald Rogers as a model useful to test "fear appeals on health attitudes and behaviors" (Floyd et al., 2000) like cigarette smoking, PMT was expanded to test its explanatory power for natural disaster preparedness such as earthquakes (Mulilis & Lippa, 1990) and floods (Grothmann & Reusswig, 2006). There was a crucial change in the application of PMT after Rogers though. Whereas Rogers looked at *stopping people from continuing a negative behavior* (e.g., smoking), later researchers observed the power of PMT also to *encourage proactive or preventative behavior*, that is, beginning to take action before an adverse event or lifestyle choice.

While various authors subdivide PMT differently, the main bifurcation is into *threat* and *coping* appraisal components. The *threat appraisal* is an amalgamation of probabilities: the chance of an event happening and its severity upon an individual. The evaluation is both emotional and cognitive and allows for various types of hazards ranging from low-

frequency/high-impact[82] (e.g., a tornado) as well as high-frequency/low-impact (e.g., a home power outage). The *coping appraisal* deals with response efficacy (the belief that taking action will truly mitigate or remove harm to self or others) and self-efficacy (the belief that one can actually perform the acts required for response). Some researchers found that a threat has to reach a certain tipping point before one is motivated enough to take action (Grothmann & Reusswig, 2006). Still, many found an intervention such as risk communication (via the government, health care professionals, or private actors) could nudge individuals in the right direction (Floyd et al., 2000; Grothmann & Reusswig, 2006; Mulilis & Lippa, 1990). Indeed, this tipping point allowed the coping appraisal component to enter into the equation of real change. Grothmann and Reusswig argue that PMT's primary distinguishable characteristic from other hazard studies in psychology and geography is the coping appraisal mechanism.

Between the two processes, threat appraisal and coping appraisal, the common finding in the literature cited is that the latter is the more powerful of the dyad and is most supported by empirical data. This verdict is true in both health promotion and disaster preparedness articles.[83] Consistently, the belief that taking action (alternatively called coping, protective responses, or response/self-efficacy) was most highly correlated in quantitative analysis with behavioral modification, a feeling or belief of greater control. In her research on survivalists and preppers, Wallace found empirical survey evidence indicating that PMT's coping components regarding proactive self-protection was statistically correlated with survivalist identity in the context of terrorism and crime. She also noted fear was less likely to motivate

[82] This term, and its related complements are also known as low-frequency/high-harm e.g., Sunstein 2005.
[83] See also (Plotnikoff and Trinh 2010).

survivalists to act as compared to the rest of the population, but uncertainty and the desire to be prepared for multiple future threats was far more of a theme for survivalists than non-survivalists (Wallace, 2020). PMT also shows how government can be a positive force in pushing for resilience. PMT also has the most significant linkage with lower-level disaster preparedness studies.

Each of the above theories comports well with ontological security, which revolves heavily around the anxiety brought about by uncertainty. Anxiety/Uncertainty Management Theory, Terror Management Theory, and Protection Motivation Theory all discuss fear in some way, but psychological safety only comes via *doing*, not just *recognizing* that hazards exist. Taking actual action via connecting means with ends is vital to reduce uneasiness, achieve agency and a sense of control, and is sustained recursively via routines. Therefore, these various theories offer complementary evidence supporting ontological security as a causal explanation for the actions of extremely prepared individuals. Of the three, Protection Motivation Theory is most supportive and provides a baseline of guidance to transform how I use ontological security in my model into empirically testable variables. However, I maintain ontological security for three reasons. First, in relation to other explanations like PMT, it is comparatively parsimonious and generalizable. Second, it serves as a more familiar bridge to bring political science into the discussion on the highly prepared. And finally, ontological security has been theorized by others more deeply to both individuals and collective entities such as communities and states than the other approaches.

With the table set, I perform the first test of my model and theory. The setting is historical, resides in America alone, and weighs in on an over forty-year feud between

Dominants and Challengers. The main point of contention is whether or not all (or the overwhelming majority) of highly prepared individuals are also ideological extremists, cultists, or psychologically unbalanced. This dichotomous fissure is present in nearly every writing on the topic and has placed discussion into a deep rut. A significant part of the problem is due to the conflation of terms. Using ontological security, one can see why certain groups (e.g., anti-government entities, white supremacists) act the way they do. For them, the perceived threat *is* the government or non-whites, so they take action to regain agency in a mirrored response. That is, ontological security provides support for the Dominant position. However, it gives far greater backing for the Challenger position; those who contend highly prepared individuals are a kaleidoscope rather than monochrome. The next section delves deeply into this history, terminology, and previous attempts at typology.

III: American History and the split between Dominants and Challengers; how Ontological Security supports both claims

"Thus is born the workaday American survivalist. For the purpose at hand this is a survivalist with a small s, not a political zealot, not a racist, not an anti-Semite or adherent of Identity, the Posse or any other right-wing credo. This survivalist is just somebody with a natural drive for self-preservation and a hope for getting past the inevitable nuclear exchange. But . . . there is an increasingly fine line that separates ordinary and presumably mentally healthy people who begin dabbling in small-s survivalism from those who burst forth on the scene with semi-automatics and machine guns blazing, full-blown members of the Survivalist Right" (Coates, 1987).

The classic story of the history of American preppers and survivalists begins in the 1970s, but its origins are actually deeper and started at least a quarter of a century earlier at the dawn of the atomic age. With nuclear proliferation, the arms race, and the Cold War, civil defense discussions were national, individual, and highly rational considerations. Four

countries, especially Britain, the United States, Switzerland, and the Soviet Union, built bunkers and fallout shelters to house, at the very least, strategic assets. However, costs and concerns piled up in the US and Britain, and their governments abandoned nationwide nuclear coverage for all (Vale, 1987).

Instead, American schoolchildren practiced duck-and-cover drills, and parents were encouraged to build basement or backyard fallout shelters. The US Federal Civil Defense Administration provided a technical manual to the populace, giving guidance on items to store such as a radio, sanitary items, and a two-week cache of food and water (Federal Civil Defense Administration, 1958). This manual included architectural drawings and supplies required for the construction of said bunkers. With government prodding, it was this apocalyptic mindset to which many feared awakening one day in a post-nuclear exchange world.

But the dread of atomic fallout was not the only end of humanity concerns. William Vogt's *Road to Survi*val, Rachel Carson's *Silent Spring*, and Paul R. Ehrlich's *The Population Bomb* induced environmental anxiety. The riotous 1960s with massive social unrest, the assassinations of President John F. Kennedy and Dr. Martin Luther King Jr., and the beginning of the Vietnam War made domestic life tumultuous. This was followed by the 1970s economic shocks such as the abandonment of the gold standard by President Richard Nixon, the 1973 Oil Crisis, and the stagflation suffered under President Jimmy Carter, which contributed to fiscal fears.

It was this combined milieu that birthed the survivalist school and moniker. The founder of the word was Kurt Saxon in 1976 (Saxon, 1980). And while Saxon was pro-gun, he also connected his brand of survivalism with similar groups, using such terms as "back-to-the-

landers," "ecologists," and "retreaters." Retreaters et al., according to Saxon, were "pacifists" concerned with pollution and urban strife. Survivalists were more jaded about the human condition. It was also Saxon who noted some of the earliest negative media portrayals of survivalists, stating: "Do not be surprised when you see Survivalists portrayed as idiots and fear-crazed kooks" (Saxon, 1980). This moment in time (roughly 1976-1984) demarks where nearly all future discussions of survivalists split. The overwhelming majority of writing from 1984 and onward focused on survivalists or retreaters *who were also extremists*. Alternative depictions were nearly nonexistent. I return in Section Three to Saxon's depictions and show we have come nearly full circle.

For this section, though, I first trace the Dominants' history and arguments, then the Challengers' rebuttal. I show how ontological security provides evidence for both philosophies and I conclude that while they are talking about different entities, each proffered group follows the contours of my model's construct. This is the first test. To provide a foundation for Section Three, I also include historical attempts at typology for survivalist/prepper groups.

A. The Dominant View: Negative portrayals of preppers

"To the extent (Modern Survivalism) is understood it's basically ridiculed . . . especially in mainstream media . . . it's laughed at. People who buy gold [are] laughed at by the financial media. People who have more than a .22 caliber pistol have an 'arsenal'. . . he has extra food on him . . . has a case of water in his garage, he's a Survivalist."
Oliver a prepper with a Master's in Mechanical Engineering[84] (Gonowon, 2011)

Oliver has every right to be concerned about his representation. While interviewed prior to the airing of the first episode of *Doomsday Preppers*, there was an established narrative that large-scale disaster minded individuals were abnormal. Gonowon approached the study of preppers from her field as a psychologist and discovered "our understanding of such a population is *skewed at best* and *stereotypically pathologized* at worst" (emphasis added). Continuing, she stated:

> "Paranoia, obsession, compulsions, trauma, and delusions are just a few examples that Modern Survivalists could be classified under. Although preparation and beliefs vary between individuals within the survivalist community, their preparation can be viewed as extreme and debilitating behavior when compared to the beliefs of the general population. Without the proper context, the behavior of preparation can be mislabeled under a number of DSM-IV diagnoses" (Gonowon, 2011, p. 8).

Why does Gonowon give such a stark portrayal and warning? In the preeminent casting, preppers writ large are deserving of contempt and ridicule. While some Dominant writers did offer token examples of "good" (i.e., non-racist, non-white, or non-conservative) survivalists, the explicit overall message was one of preppers as outcasts. In this lens, affiliates were one or more of the following: white supremacist, anti-government, cultic, apocalypse-minded, or psychologically unbalanced (Campbell et al., 2019; Garrett, 2020b; Gonowon, 2011; Mills,

[84] Oliver is a pseudonym assigned by Gonowon.

2019a). As I will show below, the Dominants mistakenly use a fallacy of composition or fundamental attribution error. However, using ontological security provides a much clearer lens and basis of explanation.

Picking up where Saxon left off, several events and researchers placed well-deserved scorn on a related but not equivalent collection of militant separatists. The poster child of the 1980s was the Aryan Nation, a white nationalist group headquartered in northern Idaho. This racist assembly, along with a derivative organization called the Order (also known as the Silent Brotherhood), conducted such crimes as "counterfeiting; armed robberies with proceeds totaling more than $4 million; assaults on Federal officers" and "bombings" (Harris, 1987). They were anti-government, heavily armed, and espoused a sect of Christianity that professed whites to be the true children of God (instead of Jews). Members should prepare for "racial and social upheavals that, according to Identity doctrine, will precede the Second Coming of Christ" (Ibid).

A seminal book of the time detailing several of these groups and individuals was James Coates' *Armed and Dangerous: The Rise of the Survivalist Right.* Coates was a reporter for the Chicago Tribune and alleged white power fringe organizations (and conservatives in general) were emboldened by President Ronald Reagan's speeches as well as those by some of his cabinet members. But Coates' work is troubling on many counts. First, he included the firebrand Lyndon LaRouche with the Survivalist Right, even though LaRouche was a devout Marxist, Socialist, and Democrat.[85] LaRouche and his followers were vehemently anti-gay, blamed the AIDS crisis on blacks and inter-racial sex, and denounced Jews for multiple

[85] All of which Coates himself acknowledges, see p. 200.

conspiracies, including the spread of AIDS and control of the media and government (Coates, 1987). Additionally, LaRouche and his followers repeatedly ran for political office on the Democrat ticket, including their high-water mark of the 1986 Illinois governor's race. In fact, LaRouche himself came in *second place* against President Bill Clinton in the 1996 Democratic Party presidential primaries with 5.5% of the vote.[86] But Coates associates LaRouche with survivalists because a right-wing political advocacy group, Liberty Lobby, helped LaRouche sell some of his ideological tracts and called him "a legitimate ally" (Coates, 1987).

Second, Coates, like Harris (*supra*), showcased the range of felonies and terrorist activities committed by several white hate groups. Coates believed that the primary political violence of the 1970s came from the "ultra-left," but he wrote it had shifted to the right-wing in the 1980s. But Harris, an Intelligence Research Specialist at the Terrorist Research and Analytical Center for the Federal Bureau of Investigation, noted several domestic terrorist groups operated during both time frames. For example, some Puerto Ricans were agitating for independence who were linked to 100 terrorist incidents, Jewish militants responsible for dozens of acts of violence, and radical "white leftists" and black movements working hand-in-hand "such as the Weather Underground, the Black Liberation Army, and the Black Panther Party" (Harris, 1987). So why were these leftist groups not connected to survivalists?

A key reason was due to one other aspect of the white nationalists: where they lived. Whereas, for the most part, the militant black, Puerto Rican, Jewish, and white-left terrorists remained in cities, the far-right white nationalists lived in the countryside, a locale often associated with conservative or Republican values. It was isolation and secrecy that made them

[86] https://en.wikipedia.org/wiki/1996_Democratic_Party_presidential_primaries.

different, including a penchant to live in rural settings where they stored up ample supplies of foodstuffs or hunted for sustenance. Many of them were "compound dwellers" (Coates, 1987). And, as Toy annotated, during the trial of Aryan Nation members for "federal racketeering and conspiracy charges involving robbery and murder" the "television and newspaper accounts . . . reinforced an image of neo-Nazis that resembled the widely held stereotype of armed and camouflaged survivalists fleeing civilization" (Toy, 1986).

Connecting these groups to my model and to ontological security is straightforward. First, the United States government was the disaster these groups were preparing *against* so there could be no expectation of mitigation from the very source of the problem. For the survivalist right and the white supremacist groups, to counter the disaster threat and attain agency, they stockpiled weapons and retreated to rural areas where dependence on the land could replace dependence on government. They also formed communities which reinforced their beliefs. Government actions against their groups served as proof that government was the disaster, and the cycle began anew. To avoid repetition, each of the examples in this section below follows a similar pattern, what is exchanged is merely what disaster is reified and then countered against. What is also common is the negative way most are portrayed by Dominants.

Events of the 1990s added cults. In 1990, the Church Universal and Triumphant (CUT) held a gathering of several thousand members at their Montana property (Lamy, 1996). The site boasted underground bomb shelters and access to the area was on a fee basis ($10,000 minimum) and connected to a belief in the soon to occur end times. Just a year prior, the group's vice-president, Edward Francis, was "convicted of illegally purchasing $100,000 worth

of semiautomatic weapons and handguns and 120,000 rounds of ammunition under a false name" (Ibid). The group, however, remained largely peaceful and is still in existence today. Not so lucky were the adherents of David Koresh, leader of the Branch Davidians in Waco, Texas. The 1993 warrant delivery and subsequent attack on their compound resulted in the deaths of 144 civilians and four ATF agents (Ibid).

Yet the 1990s also saw the end of the Cold War, a booming economy, greater globalization of the world including a uniting of Europe under the Maastricht Treaty in 1993 and the rise of the internet. What sane person would feel compelled to prepare for catastrophic disaster under such conditions? With this zeitgeist, survivalists of this decade were summarized as "rural," "male," "lower-middle-class and middle class," with an "ideology rooted in racism, sexism, anti-Semitism, and homophobia" (Kimmel & Ferber, 2000). It was not until the end of the decade that the next big scare came, that of the Y2K computer fears. The highly prepared were again binned into two groups. Sporadic positive stories, like one interviewing Jim and Susan Smith[87], covered how they planned to continue with normal life after January 1st, 2000. They had no "locked-and-loaded Uzis" or "concertina wire" and a "bunker" but did have a 60-acre plot where they conducted subsistence farming (Martin, 2000). The author referred to this couple as "survivalists-lite." More prolifically though were scholars who focused on the overhyped fears of millenarians. Blended together were Christians, Branch Davidians, other cults, and Nazis as groups who all feared apocalypse and some version of a Second Coming (Sickinger, 2004). Schaefer, while noting that "some computer programmers and corporate executives evidently" were prepping for a technological calamity, instead focused on the

[87] Pseudonyms as assigned by Martin.

"alarmist sensationalism" of Christian "evangelical elites" such as Jerry Falwell or Pat Robertson (Schaefer, 2004). While the comments of these televangelists are admittedly bombastic and sensationalistic, they took place at a time where cyber-experts, journalists, and even the upper echelons of the military proclaimed the potential of electric grid failure, economic collapse, and even accidental atomic weapon detonation or launches when the clocks rolled over (Janofsky, 2000; Kirsner, 1999). When the threat passed, *The New York Times* once again heaped invective by connecting those who prepared with cults and hoarders, stating they should have been "humiliated" but instead those who went to exceptional lengths of readiness experienced "relief and gratitude and a sense of abundance" (Ermann, 2000).

Several incidents in the 2000s again energized the preparedness movement. On the larger end, the first was the terror attacks of September 11, 2001, the second was Hurricane Katrina, and the third was the economic crisis of 2007 and 2008. While it should have been more difficult to dismiss the threats of calamity coming from several diffuse sources that survivalists and now preppers (a term popularized after 2007) were insuring against, the attacks against them continued. Ideology and connection to the right once again took center stage. Articles such as "*Preppers Are Getting Ready for the Barackalypse*," a commonly cited piece that indicated the election (and reelection) of President Barack Obama was a driving force to get ready for TEOTWAWKI (Murphy, 2013), and was par for the course. The Southern Poverty Law Center noted "antigovernment patriot" groups dropped in number by 80% between 1996 and 2001 but exploded by over 1,000 percent from 2007-2011 (Mills, 2019a). Preppers were once again mistakenly lumped in as part of these organizations. Other journalists ridiculed many of the preparedness steps that preppers were taking and embarked on *ad hominem* attacks.

These white, middle-class, right-wing individuals had a "rigid, irrational worldview," were driven by fear, and possessed a "latent conservative anxiety" (Richardson, 2013). Although Richardson made some attempts (citing Coates, *supra*) to distinguish between "big-S" Survivalists whose heritage was of a "foundation of violence, racism, and anti-Semitism" from "small-s" survivalists (i.e., preppers), this latter group did not "have very far to look before running up against the Survival[ist] Right" (Ibid with Richardson quoting Coates). Preppers of this age were asserted to be almost exclusively from Tea Party stock and took up arms to defend against imaginary fears of large-scale riots and looting (Ibid). While many of these journalism-based accusations – some driven into overdrive when National Geographic Channel's reality TV show *Doomsday Preppers* premiered in 2011 – were rooted in both some truth and a quest for readers, even academics fell prey to these caricatures.

According to the scholars following in their forebearers' footsteps, preppers were excitedly getting ready for the "man-pocalypse," a time when masculine virtues would once again be in demand (Kelly, 2016). *Doomsday Preppers* gave men "theatrical space to perform their feelings of rage and victimhood." Kelly noted that the TV show's demographics were 60% men (missing the fact that 40% were women). One peer-reviewed article indicated preppers were portrayed as all white in TV and media (Nguyen, 2018). Yet, he failed to note obvious exceptions to this, such as the black actor Will Smith in *I Am Legend*, Denzel Washington in *The Book of Eli*, the racially diverse cast of AMC's *The Walking Dead,* or the reality show *Naked and Afraid*.[88] Nguyen's analysis centered on the whiteness of the United States "maker" culture such as "do-it-yourself (DIY) activities, mechanical tinkering, and artisanal craftwork" in which

[88] For an in-depth analysis of racial diversity in apocalyptic film and television, see McCarthy (2018) pp. 64-92.

whites (alone apparently?) would use these skills to survive a post-Armageddon world with "non-White" areas (e.g., cities) as catastrophe backdrops (Ibid). And in this future world, the survivors, in another thesis' fictional movie analysis, depictions of the differing genders and races working together at the end of the world due to "[a]steroids, aliens, or zombies" are actually . . . racist and sexist (McCarthy, 2018). Paradoxically he goes on to state that while "[o]vert racism and sexism are portrayed as threats to survival," in the imaginary future:

> "Raced and gendered patterns of representation are indebted to a post-racial and postfeminist set of assumptions which privilege a conservative (that is white, patriarchal) understanding of who should survive. Generally, white men are the de facto survivors" (McCarthy, 2018).

But the award for the most scathing depiction of all preppers, which seems to sum up every possible negative stereotype showcased above, comes via the academic journal *Quarterly Review of Film and Video*. Foster's broad brushstroke against preppers is exampled by the cast of *Duck Dynasty*. Preppers are (sometimes) reformed "rednecks" who are part of the "ruling white class." They are "conservative," a "patriarchal dream team of wish fulfillment; a white male fantasy of elitism," who are "selfish," lack "control" and "empathy," are "anti-gay" and "racist." The "crisis in white masculinity" has spurred on a "nation . . . armed to the teeth and ready to kill their neighbors" (Foster, 2016).

This is the Dominant representation of survivalists and preppers in both the media and academic circles and has been for over forty years. As recently as March 2020, sounding the alarm over COVID-19 and the need to prepare branded you as a bit of a nut (Ghaffary, 2020), even though it was the non-prepared rushing out to hoard toilet paper, not the preppers (Yuhas, 2020). With such an environment, individuals like Oliver could be justified in feeling a

bit embittered. With such a depiction, non-white/non-conservative/non-rural individuals could also be defended in their prepping avoidance due to fear of association (cancel culture) or ostracized treatment (when dealing with those who actually were racist or radicals). But are the above depictions the exception or the rule? Certainly, *some* survivalists trace their origins to fanatics or are motivated by extremist beliefs, but do the majority? Are all preppers white, conservative, and straight? The Challengers below argue this is not the case.

B. The Challenger View: Far more normal

"Preppers often describe themselves differently than scholars, and scholars who took the time to engage the community noted that the narrow portrayal of preppers and survivalists by outsiders does not accurately fit the communities and individuals" (Lindsay, 2015).

The previous section provided an overview of the thoughts of the Dominants on preppers et al., but this view is by no means exclusive. As noted earlier, attempts to cast preppers in a mixed or even positive light began ostensibly with Saxon in 1980. Still, it was not until the early 2000s that a larger multitude of voices began to push back against – or at least offer angles that differed from – the prevailing wisdom. Investigators and scholars in this field, the Challengers, have made it a point to show the diversity of preppers regarding racial, gender, ideological, religious, and other categories. Fundamentally, many of these Challengers have argued that a large portion of highly prepared individuals are psychologically sound and well-adjusted.[89] What unites Dominants and Challengers is that each of their groups and sub-groups are individuals and collective entities seeking increased disaster resilience against a specified

[89] Of note, only American Challengers are listed here to give direct comparison to the Dominants. The international literature on preppers contains a larger Challenger assemblage of writing.

threat. That is, all parties are taking action to attain a state of ontological security. The problem for the Dominants is that they have conflated nearly all disaster preparedness with something negative such as white supremacy or anti-government beliefs. Challengers disagree.

After Saxon, it was Toy who noted that "[s]urvivalists belong to many ideological camps" and it was journalists chasing "sensationalism" who "sometimes reveal an abysmal ignorance of history" or historians lacking intellectual curiosity that were responsible for the one-sided depictions (Toy, 1986). "One result of this neglect is a blurring of the distinctions that separate many survivalists from the political extremists" (Ibid). Philip Lamy's book *Millennium Rage: Survivalists, White Supremacists, and the Doomsday Prophecy*, cited earlier, mainly depicts a collection of individuals in the vein of big-S Survivalists (to borrow Coates' categorization), but does feature at least one individual to represent the small-s survivalists. "Abe," a pseudonym, was at the time a 25-year-old survivalist who Lamy said was typical of the small-s types. Abe had two bachelor's degrees and was working on a masters in social psychology.[90] He was white but not racist, Catholic but not a religious fanatic, and owned guns for hunting (Lamy, 1996). After this though, there was a long pause on balanced or constructive representations of preppers, other than the brief Y2K interest noted in the previous section or Mitchell's work (*infra*).

The next evolution came in 2008, in what one writer referred to as "survivalism's Third Wave: regular people with jobs and homes whose are increasingly fearful about the future—their paranoia compounded by 24-hour cable news" (Bennett, 2009). In this highly positive

[90] Abe is not atypical in his education. Mensa had a "survivalist-oriented subgroup of computer programmers, engineers, dentists, writers, and other professionals" (Mitchell 2002). As shown in Chapter Two the educational range of resilient citizens roughly mirrors that of the United States as a whole.

media article, she indicated a newer group of individuals who practiced "survivalism-lite" and attempted to distinguish the term "preppers" as a separate and distinct category from big-S Survivalism's connections. Preppers could be soccer moms, and their activities were rational reactions to natural and manmade threats. She concluded the piece by asking, "As for the rest of us, isn't it a little bit crazy *not* to prepare?" (Ibid). This depiction, and those like it, started changing the narrative of preppers to those who practiced or possessed resiliency or were self-reliant, not individuals readying for a race war or the apocalypse. While the disambiguation of terms (e.g., prepper/survivalist et al.) never took hold, the resilience concepts fared better (Sims, 2017; Sims & Grigsby, 2019).[91]

These empowering preparedness tactics were for all people. An archetypal representation would be individuals like Ron Douglas. In 2010 he founded numerous self-reliance businesses to cater to all types.

> "'It's not doomsday.' It's about showing the gun-toting mountain man in his camouflage and the suburban soccer mom in her minivan that they want the same thing: peace of mind. 'We don't say, [h]urry up and buy your stuff because Obama is going to ruin the country,' Douglas said. 'We don't get into the political crap. We just want to teach people the lifestyle.'" (O'Brien, 2012)

This peace of mind concept could be seen as contributing to mental health, a way to destress and take control (McGrath, 2017). From a clinical perspective, it was psychologically sound (Gonowon, 2011). Others found a comparable concept at work: the interaction of "self-sufficiency, self-reliance, personal responsibility, and independence" (Sims & Grigsby, 2019). In

[91] Resiliency is a key concept in disaster management, risk, and communication.

other words, ontological security is reached via preparedness against a specified or general fear of disaster that government will not fully mitigate or prevent.

Whereas everyday citizens acted as predicted by prospect theory, prepper actions comported more to Sunstein's *Catastrophic Harm Precautionary Principle*. Mills' empirical work discovered it was *not* primarily Armageddon level (low probability) fears that motivated preppers but instead of more probable and frequent hazards imposing a temporary disruption in everyday life (Mills, 2019b). The "combined risk posed by several threats" motivated his respondents; they took a variety of precautionary steps against such possibilities as a proactive action against uncertainty. Various activities fall along a "spectrum" of response, a recurrent theme in Challenger writing.

Prepping was something all races could and should not only participate in but lead. This is evidenced by Jason Charles (leader of the New York City Preppers Network) or Aton Edwards (founder of the International Preparedness Network), both of whom are prominent preppers as well as African-American (Feuer, 2013; Yuhas, 2020).[92] Racial injustice could be a motivating factor with prepping as a response to achieve ontological security.

> "It was not by chance, Mr. Edwards said, that prepping first took root in New York in the black community: he himself is black, and in the 1990s he became a frequent guest on "The Open Line," a call-in radio show on the "urban adult" station WBLS. Around the same time, he started giving classes in disaster preparation at the National Action Network, the Rev. Al Sharpton's civil rights group. "Obviously," Mr. Edwards said, "because of our history, black folks know that bad things happen" (Feuer, 2013).

[92] At least from a journalism perspective, Mr. Charles, who is also a New York City firefighter, seems to be one of the most interviewed individuals on prepping.

These examples follow my model's format. In this case government is not the source of the disaster but provides no mitigation. Preppers of color take steps to increase resiliency against threats because of the *perception* of government inaction. They strive to achieve ontological security via agency and gather in communities for mutual support. Events such as Hurricane Katrina seem only to reinforce their fears. The similarity of response and flow between this group and the survivalist right entities showcased earlier – a highly dissimilar group – bolsters confidence that my model holds universal applicability.

While no study has conclusively confirmed this, numerous research articles indicate racial and other forms of discrimination on prepper websites or expos are discouraged or outright forbidden.[93] Chad Huddleston's embedded scholarly ethnography on the "Zombie Squad," a sizeable international prepper group, clearly shows this. For context, Huddleston connected preppers to the voluminous work done on household preparedness and disaster planning using those disciplines' keywords such as resilience, vulnerability, risk, and adaptation. He delineated preppers from survivalists in a way akin to that of Coates' big-S Survivalist (i.e., extremist) to small-s survivalist (i.e., prepper). Squad members who participate in emergency response and anyone who posts on their website are explicitly prohibited from racist or xenophobic beliefs (Huddleston, 2016). In fact, to be fully welcoming, the group even goes so far as to ban *all* religious or political online discussions in their forums. Mitchell encountered this in his ethnographic work across the country as well. When working with small-s type survivalists, "[p]olitical talk, ideological talk" was often "missing," and weekend survivalist

[93] Conspiracy theories are also frowned upon. Lisa Bedford, an oft-interviewed prepper and founder of the site The Survival Mom says she "tries to remove dubious posts from her group's Facebook page" (Yuhas 2020).

excursions sounded more like "hardware or sporting goods store employees or handymen, arguing the merits of their favored merchandise" (Mitchell, 2002).[94] This segues nicely into the multi-partisan nature of modern prepping.

Politics could be a motivator or a fear, but myriad political views are represented. Huddleston believes the nonpartisan event which supercharged many individuals was Hurricane Katrina in 2005 (Sedacca, 2017). Another idea was that by Michael Mills. His piece, published in the *Journal of American Studies*, found that ideologically right-leaning individuals projected fears of both government tyranny and incompetence onto President Obama (Mills, 2019a). Yet, in another article, he acknowledged that these and other fears were also non-partisan common concerns for many (Mills, 2019b).[95] Sims, in her ethnography, echoed this view:

> "What was common across preppers was a sense of insecurity politically. Their views spanned the range from libertarian, conservative and liberal. There was a range of political perspectives represented in the sample. But what they had in common was their take on politics which made them feel insecure" (Sims, 2017).

Indeed, several depictions of liberals feared similar government tyranny or incompetence under President Trump in recent years.

The rise of liberal prepping is now almost a stock observation. While Mills believes those preppers to the right ideologically have dropped in numbers (Brueck, 2019), many others have cataloged, at least anecdotally, a rise in left-of-center individuals fearing disaster. One

[94] Although politics were heavily present in other groups, especially in the extremist organizations he studied in person.

[95] Several other recent journal pieces discuss the range of prepper political views, see Conroy (2020) as another example.

Texan businessman and prepper, Clyde Scott, who built his bunker company logo after Jesus Christ, saw an explosion of liberal interest after the 2016 election.

> "'We've had liberals coming out of the woodwork to protect themselves,' the 38-year-old Texan said. Right after Trump's election, 'business went out the roof. I'd say 500 to 700 percent in one month'" (Wells, 2017).

He stated his new clientele were New Yorkers and Californians afraid of nuclear war. Mr. Scott is not alone; several other companies saw an uptick in Americans fearing a coming "Trumpocalypse" (Warren, 2017).

Kitty Stryker is another person who does not fit the chief caricature of what all preppers look like. She is female, queer-friendly, and a self-described "leftist, anarchist prepper" who participated in an "End of the World" orgy on the night of Trump's election (Stryker, 2018). Her partner handles the guns and knives, and she is skilled in medicinal herbs and food preservation. Kitty also improves her first-aid skills as a street medic at protests (Ibid). Male and heteronormative domination of prepping is assumed but is coming under question. Contrary to her assumptions, Sims found that women were full or equal partners in many prepping endeavors and had one member in her 13 person ethnography, Judith, who was a lesbian (Sims, 2017).

And as final examples of left-of-center preppers, there are John Ramey and Colin Waugh. Mr. Ramey, a former Silicon Valley entrepreneur who fled to Colorado after Trump's election, created the website *The Prepared*. It is a place for "rational preppers" who wanted advice on disaster preparedness without listening "to someone talk about how Hillary Clinton was going to steal your children" (Bowles, 2020). As for Mr. Waugh, President Trump's ascendency motivated this Obama supporting, liberal Mississippian to found a Facebook group

called “Liberal Prepper.” In no small irony, Waugh explicitly discriminates on who can join the group. “We welcome all individuals who are center and left of center politically. We do not knowingly accept conservatives, [or] Trump supporters, into this group” (Sedacca, 2017). In every case listed by Challengers, ontological security clearly explains why such a diverse set of individuals acts and my model explains the process.

C. Historical Typology

Examples of typology or categorization in survivalist and prepper research are bountiful. As shown, the overwhelmingly predominant debate has revolved around splitting away preppers (aka little-s survivalists, modern survivalists, moderate survivalists,[96] survivalism-lite practitioners) from big-S Survivalists (aka extremists, white supremacist militia, Survivalist Right). Others have attempted to cleave survivalists from preppers or cluster them into different bins based upon several standards. Some splits are very generic: being a prepper is simply attitudinal (Campbell et al., 2019); or a strong desire to be self-reliant (Aldousari, 2015); or a cultural or generational marker of practice (Lindsay, 2015); or relatedly by a “’storied’ material practice” (Barker, 2019) or some mix of the above (Sims & Grigsby, 2019).

Some are slightly more specific. Saxon (1980) did so by splitting “retreaters” or “back-to-the-landers” as distinct from survivalists, with the divide coming via fears of ecological decay (the first two) or more martial concerns (the last group). Coates saw it this way as well, stating: “If there is a left-wing component of Survivalism, it probably consists of people who cast their

[96] Imel-Hartford, 2013.

plans along the lines of the *Whole Earth Catalog* and *Mother Earth News* and don't let their children play with toy guns out of a sense of social commitment" (Coates, 1987).

Other writers had alternative clefts. Peterson attempted a two-fold approach. The first was a "survival continuum" with four *levels* (Peterson, 1984), which would be close to the days of total survival from FEMA's survey. His second parsing was the overall *strategy* utilized: "urban retreating," "wilderness group retreating," "marine boat retreating," etc. According to Peterson, a Level 3 Wilderness Group retreater named Frank: has a "3-month food supply; [p]eriodically visits his survival base (retreat), a large farm; [and] has supportive relations with long-time neighbors and nearby relatives" (Ibid). Coates (1988) was the father of the big-S Survivalist (extremist) versus small-s survivalist (proto-prepper nomenclature). But he also had a second cleavage, similar to Saxon. In this second cleavage, it was the "Survivalist Right" who were "armed to the teeth" and "pose the threat of political assassination, racial violence and virtually any type of mayhem one can conjure" on one side. On the other side were "Californicators" or "tree huggers," individuals similar to Saxon's ecologists or modern-day individuals who fear climate change.

Lamy (1996) melded a combination of Coates and Peterson (level of commitment, source of motivation, having a bunker). Wojcik concentrated on those motivated by fears of an apocalypse, both of secular and religious origins, for his categorizations. Those in his "unconditional apocalypticism" group would be Christians, Jews, or Muslims awaiting the Messiah or the Mahdi. In contrast, those binned into "cataclysmic forewarning" would be people who feared climate change or nuclear war (Wojcik, 1997).

In a work that categorized these individuals strictly within the Australian survivalist sub-culture, Simon Henry listed three types: preppers, mainstream survivalists, and militant survivalists (Henry, 2016). His first two groups comport mostly with little-s survivalists, the latter with Big-S. He also has a twelve-step pathway to show how one goes from regular to radical. However, his overall descriptions seem to match almost exclusively with the Sentinels I discuss later.[97] More importantly, Henry is changing the narrative within Australia that their survivalist subgroups are "fringe" or "right-wing" alone, and instead are composed of "normal people with an interest in preparedness" and include "professionals such as doctors, lawyers and academics" (Deutrom, 2018). Challenging this depiction is necessary since he found Australian conceptions came from the American Dominant's representation.

To summarize Section Two, there are three points. First, according to the Dominants, the prepper community is overwhelmingly white, male, non-inclusive, and right-of-center ideologically. While there are examples of those that do not match these characteristics, they seem to be the exceptions to the rules. The Challengers refute this near exclusivity, showcasing numerous cases that are nonconfirmatory. Quantitatively, at least for the modern-day, the Challenger viewpoint is closer to reality. My Chapter Three, above, utilized two national surveys conducted by FEMA and discovered that "resilient citizens," i.e., individuals meeting Criterion One's requirement for 31-days of survival, were a moderately representative cross-section of all of America regarding race, education, income, ideology, and several other factors. Only in gender was there a significant difference, with men far more likely to indicate exceptionally high preparedness levels.

[97] He did connect some with Homesteaders as well, but very little with my other three groups.

Second, ontological security is evident in both Dominant and Challenger depictions, but for clearly separate groups. The former's description of big-S Survivalists is of people that fear the government or minorities. These individuals maintain their sense of being and identity by segregation and withdrawal into like-minded communities. Prepping is a response taken to maintain this separation, but the focus is very narrow. In contrast, Challengers describe a far more extensive set of individuals, those who have in commonality the *action* of prepping, not the extremist motivation. This speaks to one of the struggles in prepper research: equifinality; many roads lead to Rome. Preppers are far more diffuse in their composition because their motivation varies by an assortment of disaster beliefs and risk calculation. Yet, preppers also take their prepping actions as a mechanism to maintain their ontological security. Because of this, many big-S survivalists *and* preppers meet my Criterion Two.

To my third and final point then, no theory that I have discovered to date does the full required work of explaining a) the full diversity of those who prepare, b) a mechanism to tie threats to action, c) one that connects both to those individuals who brace for disaster at lower levels of readiness and d) excludes those with extremist ties. My general model does so, and now that I have shown it adequately subsumes previous work, I move to a further expansion: classification of resilient citizens by subtype.

IV: An updated classification

"*Eventually, the Chef Boyardee is going to run out*."
Cody Lundin, founder of the Aboriginal Living Skills School (Bennett, 2009)

Section Two described the American history of survivalists and preppers via the feuding depictions between Dominants and Challengers. It showcased various cleavage attempts but nothing that could holistically bin related and unrelated groups to include non-preppers. Section Three is all about this distinction. Here I expand categorization via typology and taxonomy, each of which falls under my general model of preparedness with ontological security at the core. Taxonomies offer "empirically observable and measurable characteristics" (Smith, 2002). My taxonomy filters all; those with various motivations, characteristics, political ideologies, prepping *and nonprepping* actions. When used in combination, my three criteria showcase how some of these multiple entities are related in certain practices to resilient citizens but are not included among their ranks. It gives the cleavage points *and* the connective tissue, which should illustrate why the subject has had such confusion.

Typology, in contrast, as a classification revolves around "concepts" and "an ideal type, a mental construct that deliberately accentuates certain characteristics" (Smith, 2002). Here I take international work into account and blend it with research on Americans. Locales such as the United Kingdom, for example, find that preparedness action, to include preppers fall along a "spectrum" of response (Barker, 2019). Merging these works, I discuss five species of resilient citizens: Homesteader, Faithful, Sentinel, Interdependent, and Noah. While all of these groupings are not exclusive nor incredibly novel, following the guidance from King et al. (KKV), I use these typologies as a heuristic since multiple journalists and researchers continue to

conflate terms. Therefore, the juxtaposition is necessary. Of note, this typology provides descriptive but not causal inference. In combining the two approaches, the taxonomy provides the precision, typology the understanding.

Section One graphically introduced my overarching model (Figure 2) since, as Barrington Moore states: "It is easier to perceive the meaning of these departures if we first grasp the general model" (Moore, 1966). Figure 3 adds to the latter portion of this depiction. As shown, the taxonomy is the screening criteria into three groups, regulars, related, and resilient citizens. The five typologies are exclusive derivatives of resilient citizens alone, and yet their traits contain similarities to regulars and the related crowd. As a reminder, other researchers use the term prepper or survivalist (and its subordinates).

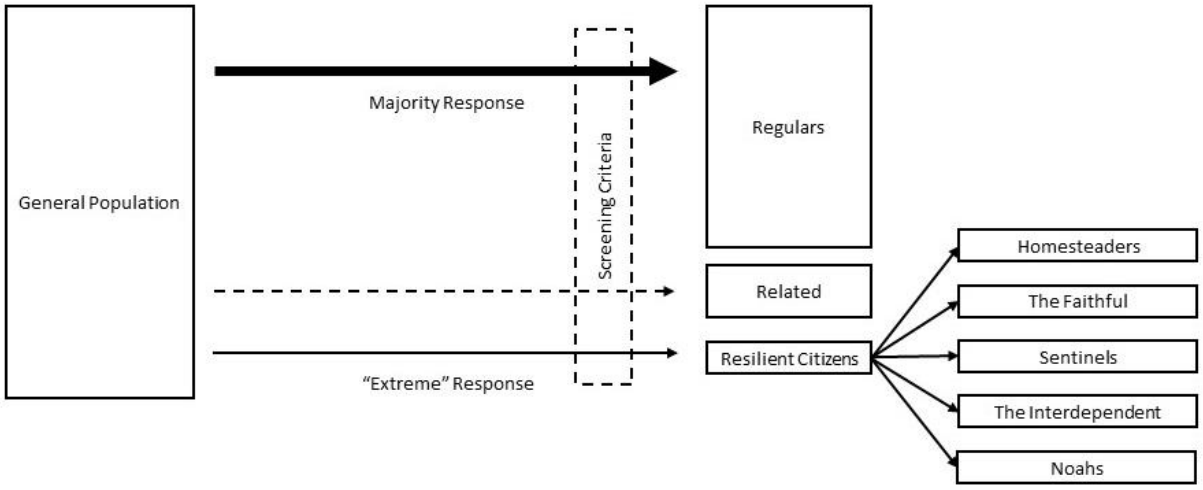

Figure 3: Continuation of the General Preparedness Model

When referencing those works, I keep their generic terms. However, my resilient citizen concept is far more stringent. No matter which group or typology is discussed though, all participants fall under the sway of ontological security. And, all of those who take some sort of

preparedness action do so against the threat of disaster and a calculation of government intervention. The diversity of input yields a diversity of output.

A. Taxonomy

"A stereotypical prepper will be… Yeah, none of us are stereotypical. I've seen preppers that have got three tins of baked beans and a rucksack – that's it, and they think … they're done. I have seen people that have got close to £15,000 worth of equipment, preps and everything, and they are … secured to a point where they could be self-sufficient for over two years. These are people that I know."
Craig, a pseudonym (Barker, 2019)

I have three criteria necessary for the definition of a resilient citizen. Each of them is binary; a person meets them, yes or no. The first separated out resilient citizens from the rest of the regular population, it was:

Criteria One, Longevity: a resilient citizen is a private actor who can survive for 31 or more days at home without publicly provided power, water, or transportation.

To expound on this designation, two additional criteria must be met:

Criterion Two, Foresight: the private actor must meet Criterion One based on an assessment of disaster risk and a paired response to that risk that is executed well in advance.

Criterion Three, Creed: an individual must not participate in extremist organizations or activities as defined by the United States military.

For Criterion One and Two, the private actor distinction is important. As indicated briefly in the introduction to this chapter, I do not include as resilient citizens those individuals whose position is within a state function that meets the above criteria *while in their official position*. I have no "state actor" resilient citizens. For example, a naval submarine on a sea mission may have over 31 days of food, water, power, etc. It could be conducting traditional military

maneuvers based upon global threats (risk paired with response). Clearly, the crew also meets the screening criteria for beliefs. However, I would not – nor I doubt would any other researcher – consider this vessel to be full of preppers. Although, individuals on that crew, while at home and in their private capacity, could be. For a civilian example, members of the United States Congress and select members of the federal Executive Branch (e.g., the President, Vice-President, and some cabinet members) all have official continuity of government bunkers to which they could move in case of, as an example, a nuclear attack. However, I would not consider the current or any previous Secretary of Treasury to be a prepper in their state function.

These private actors must also derive their resiliency from action against a threat; real or imagined, large or small. That is, they must be preparing *for* some nefarious event. This may seem trivial, but it eliminates several types of people and places them in my general theory's "related" box. A rancher might have 100 cattle on her property with enough food on the hoof to live for years. But she is not a resilient citizen. The Amish are able to survive, both individually and as a community, for more than 31 days. Still, they are not conducting their actions primarily in preparation for a coming disaster, either physical or spiritual.

Mormons, in stark contrast, are. Therefore, Criterion Two keeps many (although not all) Mormons but eliminates the Amish as a collective.[98] As a final example, take a billionaire who has a 100-acre plot, complete with an orchard, several stocked refrigerators, freezers, and pantries with back-up generator power and a safe room tucked away in their estate house. Is

[98] Although there may be individual members in the Amish community who are taking steps above and beyond their village or religious precepts to prepare for a specific or generalized disaster.

this person a resilient citizen? *Maybe*. If their actions are predicated on fears of social upheaval or other threats and not just a desire to have a well-stocked mansion, then yes, even billionaires can be preppers (and many indeed are (O'Connell, 2018)). Criterion Two is therefore causal; the response (prepping) derives from a risk assessment and the desire to achieve ontological security.[99] This metric is also paired; you do not plant tomatoes to ward off a home invasion. Ends must link directly to threats. It also cannot be a spur-of-the-moment impulse, like that which characterizes hoarders. Recall from Section One that ontological security involves habitual work. The prepping acts are repetitive and recursive, not one-off shopping trips.

Criterion Three is useful to separate out extremists and is the first attempt to my knowledge to use a regulatory measure codified under the power of the state to do so. While the spirit of Criterion Three is present in some publications on preppers (e.g., Coates' big-S vs. little-s survivalism), my taxonomy uses official military policy. I utilize Army Regulation 600-20: *Army Command Policy*, paragraph 4-12 (reprinted in this chapter's Appendix A). This provides both clearly defined terms which explicitly prohibit multiple extremist ideologies and, by extension, gives the foundation for an abundance of military judicial and non-judicial actions. Criterion Three is thus legally codified in statute. It prohibits several individual actions regarding discrimination, intolerance, support for terrorism, and seditious or subversive acts. And, as discussed in the introduction, the criterion is robust enough to apply to non-Americans.

Only within the combination of all three criteria does one meet the designation of resilient citizen.

[99] Criteria Two, of course also acts on those at levels of survival less than 31 days.

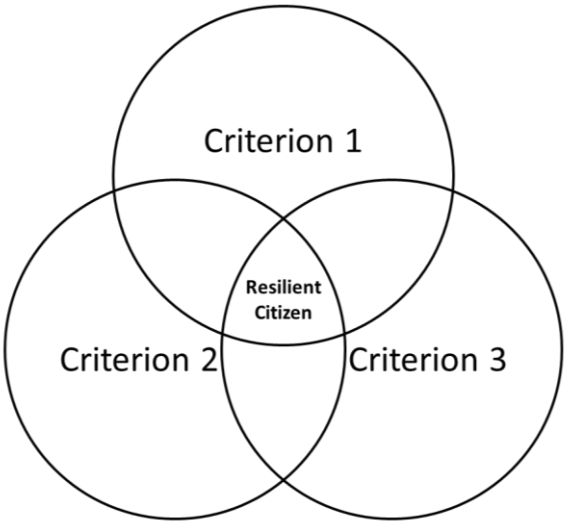

Figure 4: Visualizing group relations and intersection

Figure 4 graphically depicts a way of visualizing the overlaps and should intuitively help to see why confusion on this topic is so pervasive given the prevalence of common traits shared by preppers and non-preppers alike.

B. Typology

Analyzing the body of literature on preppers and survivalists, there are four common themes: 1) motivational fear or threat, 2) a paired response to that threat executed in advance, 3) a level of commitment to this response (measured via ability, items, and habit), and 4) ideology (and here I mean creed, not political orientation). I am now ready to expound on the five main species of resilient citizens and their classification. Again, these are representative, not all inclusive of every possible flavor.

For typological purposes, the following groups typify and summarize the literature on preppers to date both for Americans and internationally: Homesteader, Faithful, Sentinel, Interdependent, and Noah.

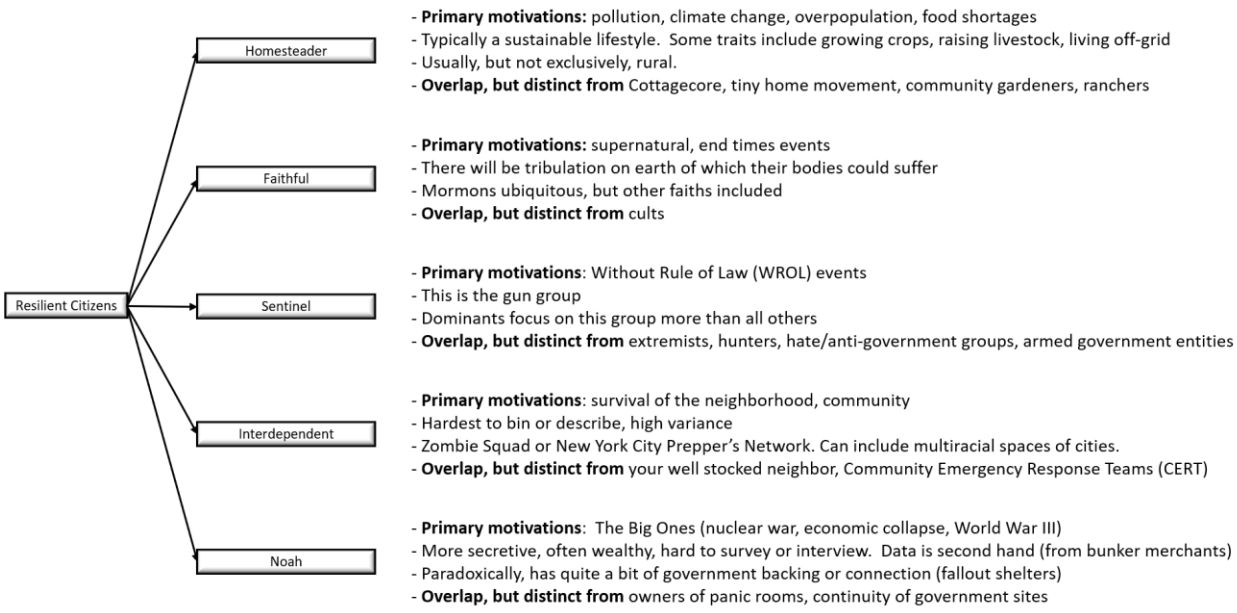

Figure 5: Typologies and Overlaps

All meet Criterion One (31+ days of survival), which parallels previous researchers' commitment attempts. They are typologies because they are binned via the ontological security philosophy embedded in Criterion Two: the *primary* motivational fear or rational calculation of disaster risk and a paired response. Members of these groups can have various impetuses to get ready for disaster and have overlap with other groups, but I collect them via their main catalyst and reaction. This is reflective, as shown, in the previous literature as well. Criterion Three eliminates extremists. After introducing each species, I then discuss those who look like resilient citizens based on similar traits but fail at least one of my three criteria and thus fall into the regular or related groups. Figure 5 provides an overview for quick reference.

These typologies are heuristic alone for one primary reason: as people enter into prepping based on an initial fear, for example, a natural disaster, they often interact with the semi-epistemic community of other like-minded individuals or naturally discover the interconnected nature of general resilience. They then learn of other disaster readiness actions

or disaster cascades, i.e., how one disaster can trigger another. For example, COVID-19 is a biological pandemic, but has cascaded into an economic disaster as well. People can start out as Sentinels and then combine in attributes of Noahs or Homesteaders at a later time or simultaneously. Shifts like this are common and my model allows for this interweaving, however for clarity of understanding I do not focus or expound on this point. But I do include a few crossover examples below.

C. The Five Groups

1. Homesteader

"A local news station in Arizona covering Hurricane Sandy asked, 'What would you do without power for a day?' This naïve question demonstrates how thinking about these catastrophes has become misconstrued. The question should have been, 'What would you do without power for months?'"
(James, 2013)

Several archetypes illustrate this group. In Section Two, I introduced Jim and Susan Smith with their 60-acre ranch. Then there is Dana, who runs a hobby farm to ensure she always has access to sustenance (Sims, 2017). She divides the labor with her husband, not by gender roles, "but by who enjoyed doing a particular job." Joanie and Graham fear genetically modified organisms (GMOs) and grow their own food for health fears and concerns (Ibid). Joanie abhors guns and felt the freedom to farm was far more important than the freedom to own a firearm. Galen Young is a retired 20-year submarine veteran of the United States Navy with degrees in horticulture, electrical engineering, and theology. He maintains a small farm in Maine and is motivated to prepare for disaster mainly because of his grandparents' experience

of losing their farms during the Great Depression and the Dust Bowl (Lindsay, 2015). Galen, like the others, is a Homesteader.

The Homesteader designation has not changed much since Saxon first identified them in 1980 as "ecologists" or "back-to-the-landers."[100] Often their primary motivation is environmental, both large natural disasters and human-induced threats such as pollution or climate change (Hoggett, 2011). Or, their concerns can be as fundamental as fears of food shortages at the grocery store. Their primary response to achieve ontological security is acreage for food production (both plant and animal), or low energy dwellings (earth homes, tiny homes, off-grid solutions), or both. As a reification of their fears, during the COVID-19 crisis, food insecurity quadrupled, and long lines at food donation sites became ubiquitous in both the first wave (Fields, 2020; Tully & Anselm, 2020) and the second (Kenton, 2020).

Common themes that emerge regarding Homesteaders are a desire to gain or re-gain self-sufficiency or resilience. Lindsay opined that this self-sufficiency linked groups together and not extremism (Lindsay, 2015). Other themes were to escape the city's rat race, including its concrete jungle makeup and high cost, to simplify living, and to connect/re-connect with the land. This connection to the ground is often generational with some family farms or plots. There was also a strong sense of community (a trait shared in many of the other resilient citizen subtypes). In her ethnography, Martha James found that every individual she interviewed stated something to the effect that "they knew their neighbors in their off-grid neighborhood far better than they ever did living on the grid" (James, 2013). Perhaps independence in some facets of life raised dependence (or at least the need for a community) in others. Other

[100] Lindsay (2015) uses this designation, Homesteader, as well as several others.

esthetics related, but not equivalent, to the Homesteading member depicted here include members of the off-grid movement (mentioned above), Cottagecore practitioners, and tiny home enthusiasts. Internationally, the Swedish cultural practice of *Jantelagen* is related to foraging (Lindsay, 2015), a semi-survival practice.

There is also a general sense that Homesteading is the most acceptable to left-of-center ideologies due to its environmental connectivity and because some variants can trickle over into more population-dense settings.[101] One example is Urban Homesteading, "a sustainable lifestyle movement that promotes household self-provisioning practices such as gardening, foraging, chicken and beekeeping, and food preservation" (Morrow, 2014). Bounds (2020) wrote extensively on Urban Homesteaders in New York City and their successes and challenges due to COVID-19. She found a generally feeling of government failure was pervasive in her interviews.

Homesteading also connects to the "tinkering" do-it-yourself culture cited by Nguyen (*supra*) and others. Community and especially urban gardens are often multiracial spaces, especially in the larger cities, and share food security concerns, which overlap with those of preppers.[102] Others focus on – or tie-in – reduction in their carbon footprint or need for municipal services. The Canadian documentary *Life Off Grid* featured Lasqueti Island residents in British Columbia (Taggart, 2016). These individuals are disconnected from electric

[101] Although political ideology is widely varied. See for example: Rosen, N. (2010). *Off the Grid: Inside the movement for more space, less government, and true independence in modern America*. London,UK: Penguin Books, Ltd.

[102] The documentary Tomorrow (available at https://www.tomorrow-documentary.com/) illustrates several examples of this including Detroit urban gardens.

transmission lines or city plumbing and rely on assorted self-supplied power and water. Not all those who live off-grid or practice urban homesteading are resilient citizens, though.

With such a cornucopia of practices with overlapping but not identical characteristics, where does one draw the division lines? Returning to my taxonomical criteria, who shares similar traits but is *not* a Homesteader? While "off-grid" the homeless do not meet Criterion One for 31 or more days of survival, so they are left out. One could say something like this for home gardeners, community gardeners, or urban foragers. While their hobbies are common to many Homesteaders, they cannot be considered resilient citizens without meeting the 31-day criteria. As mentioned previously, the Amish satisfy Criterion One but do not live that lifestyle in anticipation of, or in mitigation to, a looming disaster. So, they (as a group) are not Homesteaders. In a analogous vein, certain indigenous groups like Alaskan Natives, Middle Eastern Bedouins, or Kenyan pastoralists are living a lifestyle that provides them with 31 days or more of supplies while on the land, but it is derived from cultural and ethnic practices, not doomsday fears, so they would (as a collective body) not be considered resilient citizens.[103] And for Criterion Three, even though Ted Kaczynski (aka the Unabomber) lived off-grid in Montana and did so from anti-government motivations, he fails the belief test (support for terrorism). As COVID pushes many individuals out of densely packed cities, this version of prepping could ignite. And not just in America, Australia may see a bump as well (Turner-Cohen, 2020).

[103] Although some individual members certainly could.

2. Faithful

"When the Lamb opened the fourth seal, I heard the voice of the fourth living creature say, 'Come!' I looked, and there before me was a pale horse! Its rider was named Death, and Hades was following close behind him. They were given power over a fourth of the earth to kill by sword, famine and plague, and by the wild beasts of the earth."
The Book of Revelation 6:7-8 (New International Version)

Not all fears originate in the physical domain; some are spiritual.[104] The original Armageddon is, quite literally, Biblical. Different faiths describe a similar end-of-days scenario, times of tribulation for which true believers must prepare. For Muslims, it is the sinfulness of the earth before the return of the Mahdi (the 12th Imam) and his subsequent war against unbelievers. For Jews, the Messiah and the war with Gog and Magog. For the Christians, it is the rise of the Antichrist and his government. *Left Behind's* popular fiction series embodies fears of this nature for Christians, and Wojcik (*supra*) has cataloged the apocalypticism of multiple religions quite well in his work. And any time spent on some popular prepper websites (e.g., *Survival Blog* or *The Organic Prepper*) will quickly reveal Christian quotations, references, and mild evangelism. To be ontologically secure in this life and the next requires both terrestrial and spiritual aspects of salvation. For the Faithful, they store up preps in dreaded anticipation of an End Times future of supernaturally induced disasters and government persecution.

For religiously motivated preppers, the reigning champion for decades has been faithful members of the Mormon church.

[104] In an interesting note, in the dedication or acknowledgement section of several dissertations on disaster preparedness, multiple academics (e.g., Shalae De Jarnatt, Lee'Ann Imel-Hartford, Ahmed Meaiwedh Al-Otaibi) indicated a thankfulness to God or Allah. There are several academics in this field who left their personal beliefs unmentioned or professed atheism as well though.

> "The more sophisticated practitioners have always understood that prepping is a matter of both individual and collective wellbeing. The Church of Jesus Christ of Latter-day Saints . . . operates a massive network of grain silos and food depots. People undergoing hardship receive food and household goods, for free or in exchange for volunteer service, at the church's Costco-style warehouses. The system is vertically integrated, with food supplied by church-owned farms. All Mormons are also encouraged to maintain emergency stockpiles in their home – not only for their own sake, but to assist neighbors when a hurricane or flood strikes" (Conroy, 2020).

Preparedness is almost as central to Mormons as the faith itself. Each ward (a local level unit) is required to have a natural disaster emergency plan, and ward leaders are equipped, by the church, with radios and satellite phones (Koppel, 2015). The church even goes so far as to publish a Preparedness Manual (500 pages long), routinely updated and distributed.[105] This book covers shelter, emergency communication and sanitation, terror attacks, and yes, pandemics (Parrett, 2012). This chapter's Appendix B below gives a visual depiction of what one year of basic food storage for one person (which is the recommended amount) would look like. Membership association with the Mormon church was statistically significant for higher levels of disaster preparedness in first responders such as police officers and firefighters (De Jarnatt, 2019). The Mormons have several reasons to prepare; not only are they awaiting the end of the world or even commonly occurring natural disasters, but they also have a history of government persecution. While the LDS Preparedness Manual does contain seven pages of firearms information for home and property protection and unabashedly supports the National Rifle Association, guns are not a vital aspect of the Church in its disaster preparedness actions (Koppel, 2015). Far more common are its emergency response efforts to natural disasters, a

[105] You can find free .pdf copies on numerous prepper websites or purchase the book on Amazon. This manual is commonly referenced by non-Mormon preppers and is a collection of lists, how-to-guides, and other sundry disaster information.

task the church excels at, often besting government efforts as was seen after Hurricane Katrina (Mencimer, 2007).

Using my taxonomy, who is excluded from the Faithful? Many religiously minded individuals may think that (insert Messianic figure here) will return in their lifetimes, but not all have 31 days of preps on hand. Just being a fervent tither at the local Church of Christ or being an Imam or Rabbi does not make one a resilient citizen. As indicated in Section Two, multiple cults and white supremacist groups invoke religion (often splinters of Christianity) in their manifestos and possess 31 days of disaster preparedness materials but fail the extremism criterion. Members of ISIS or followers of David Koresh (the Branch Davidians) would not pass the military screening restrictions; therefore, they and others like them would be eliminated. However, evangelical Christians, devout Jews, Muslims, and Mormons are all allowed to enlist in the military. Thus, resilient citizens of the Faithful variety are non-extremist in belief and yet prepare at high levels in anticipation of their bodies' earthly oppression or for the calamities of the End of Days.

A related but excluded example would be Eric and Patty Lutz. They are fervent mainstream Christians and own a farm replete with livestock and produce. Yet, their actions are not based on ontological security against a disaster but rather on their professed belief to follow God's commandment to be good stewards of the land (Lutz, 2020). Parallels occur outside an American, Christian, or Mormon setting. Both Jews and Muslims revere the Temple Mount in Jerusalem and see it as the sight of future Tribulation related events. This extends to high passions regarding the Holy Land in general. While devout in their beliefs regarding the

End Times, most individuals in these religions have little to no emergency supplies and therefore fail Criterion One.

3. Sentinel

"Janie's got a gun."
Aerosmith

Due to such shows as Doomsday Preppers and both Dominant and Challenger portrayals, Sentinels are the most common depiction of preppers in the popular imagination. Several own land, hunt, fish, or backyard garden, so some might appear to be Homesteaders at first glance. But what separates Sentinels is their primary motivation: disasters regarding WROL (Without Rule of Law). WROL events happen when the government (local or national) cannot provide security, even temporarily. Sentinels, therefore, prepare for these events by owning and practicing with firearms. Martial defense is their primary mechanism to achieve ontological security. Sentinels are gun-owners, and many prefer to live in areas with a prominent pro-gun culture. Often these areas are rural where individuals can come together to achieve collective security (Giblin et al., 2012).

Saxon (1980) originally classified his brand of survivalists in this group, thus it has quite the legacy. Weapons are popularized and promoted in multiple television and movie accounts in the disaster genre. When the whole of society breaks down, it is a return to the Wild West. Disaster fiction books such as *The Patriots* by prepper James Wesley Rawles[106] describes a world after a devastating economic collapse where a band of highly armed friends must resist

[106] He spells his name with an internal comma: James Wesley, Rawles. I omit the comma for clarity here.

marauders and an illegitimate government military incursion. William Forstchen's book *One Second After* has a similar setting caused by an EMP (electromagnetic pulse) strike. His book was referenced in Congress in 2009 by Representative Roscoe Bartlett of Maryland, a former engineer, as a call to action to protect America's electrical grid.[107]

But even less extraordinary events can trigger, pardon the pun, this fear. Hurricane Katrina was a WROL event. 15% of the New Orleans Police Department (over 200 officers) deserted their posts in the aftermath (and 51 were fired for this) (Jones, 2018). The 2020 American national riots that began in conjunction with protests against the police brutality incident involving George Floyd are related to – and therefore stoke fears of – WROL events. The United States Federal Bureau of Investigation (FBI) statistics indicate 2020 witnessed a 15% increase in murder and nonnegligent manslaughter.[108]

Americans panic-buying guns is more fact than stereotype. An all-time high of 3.9 million FBI firearm background checks were initiated in July 2020 as civil unrest began. Before this, the onset of COVID-19 contributed to the 3.7 million checks in March 2020. That month broke the previous record by over 700,000.[109] Kareem Shaya says the "common thread is just uncertainty" (Beckett, 2020). And that is precisely what ontological security would predict.

These purchases are not just among whites, men, Republicans, or previous gun owners. First-time buyer purchases are up nearly 70% from their two-decade average, black American purchases up nearly 60%, female purchases up 40% as compared to 2019, and there are

[107] https://www.congress.gov/congressional-record/2009/5/7/extensions-of-remarks-section/article/E1103-1.
[108] https://www.fbi.gov/news/pressrel/press-releases/overview-of-preliminary-uniform-crime-report-january-june-2020.
[109] https://www.fbi.gov/file-repository/nics_firearm_checks_-_month_year.pdf/view.

increases in sales to liberals and Democrats (Alcorn, 2020). The National African American Gun Association (NAAGA) reports that over 25% (10,000 people) have joined its roster in 2020 alone and that there is an **"**explosion in the number of black gun owners nationwide" (Dent, 2020; Durden, 2020b). This follows large purchases of weapons by Asians at the beginning of the COVID-19 pandemic (Durden, 2020b)**.** Calls to defund or abolish police forces across the nation and the multiweek existence of CHAZ/CHOP (Capitol Hill Autonomous Zone/Capitol Hill Occupation Protest) in Seattle only fuel fears or rational calculations that cities at best, or America at worst, is headed for far higher levels of internal violence and strife. And, while the jump in firearm purchases does not immediately indicate a rise in resilient citizens, the combination of urban flight to less dense areas could be a prelude to a dramatic shift in their numbers and demographics. The trend is bipartisan. Even before CHAZ and COVID-19, left-of-center preppers were arming up, but many kept quiet about it (Bowles, 2020; Feuer, 2013)**.**

> "David Lombardo, owner of Safer USA and a concealed carry gun instructor, said he's had several callers lately who candidly disclosed their political beliefs and asked him for one-on-one training, because 'they don't want anyone to know they're doing the training, let alone going to buy a firearm.' 'I have seen the emergence of a new class of students seeking training: anti-Second Amendment liberals,' he said" (Rosenberg-Douglas, 2020).

Liberal purchases of guns do not seem to be a fluke, but their secrecy, due to fear of scorn, mimics that of many preppers' depictions.

Several parallels exist. After the 2016 Orlando Pulse nightclub mass shooting, *Pink Pistols*, an LGBT pro-gun organization saw its membership quintuple after the attack and – against liberal sensibilities – have found more acceptance on gun ranges for their self-protection choices than among their LBGT community (Branson-Potts, 2016; Urquhart, 2016).

Academics in criminal justice have linked victimization of crime (both actual and risk perceived) to driving higher gun ownership rates (Kleck et al., 2011). Internationally, Europe's migration crisis and assorted terror attacks have pushed many citizens to stock up on guns (where legal) or other weapons like pepper spray or stun guns. Firearm permits nearly doubled in Germany over two years (2016-2017) due to safety fears regarding "foreigners and refugees" primarily and neo-Nazis or right-wing extremists a far distant second (Knipp, 2018). Although "weapons' stockpiling" is seen as a mostly American affair (Campbell et al., 2019). Unfortunately, these gun-as-safety parallels are also seen in nearly every white supremacist militia and cult listed in Section Two. Again, the lack of judicious partitioning of these gun-owning members has led to much conflation. My three criteria cuts through the fog.

Who would not be included among the Sentinels? Again, gun ownership or possessing hunting and fishing skills alone do not meet either Criterion One or Two. So, not every person with a shotgun or a concealed carry permit is a resilient citizen. But the types of people these criteria *do* eliminate are multiple private gun owners and state actors such as the National Guard. The Guard, as a group, prepares for disaster scenarios in the homeland where weapons are required. But in their official capacity, these guardsmen are not resilient citizens. However, they are more likely in their households to be prepared for disaster (Ellis, 2016). Others that would be eliminated, via Criterion Three, are groups such as militant separatists arming up for a race war (examples would include the Aryan Nation or the black paramilitary group NFAC (Not Fu----g Around Coalition)). Greater international research on individuals who meet the Sentinel criteria is ripe for further study.

4. Interdependent

This group is perhaps the hardest to describe with any one collective noun as they are incredibly diverse. Communal and neighborly does not quite fit. Interdependent is defined by Merriam-Webster's dictionary as: "dependent upon one another: mutually dependent."[110] Synonyms come close to describing the genre: synergistic, reciprocal, joined, complimentary, cooperative.[111] What drives these individuals is not a singular disaster, but rather any event that threatens the local area in which they live or a catastrophe that causes an assembling of fellow Interdependent individuals or resilient citizens writ large. Their composition could potentially be vast but their commonality is community. Their presence belies the argument that all preppers are insular and care only about their own protection.

Some could have official affiliation with a prepper group. Huddleston's Zombie Squad members are an excellent typecast. He denotes several preppers as valuable members of a society. Like the Zombie Squad, some work either hand-in-hand or compliment police, first responders, and disaster groups such as the Red Cross or Citizen Emergency Response Teams (Huddleston, 2016).[112] The New York City Prepper's Network (NYCPN) or Urban and Outdoor Survival club practice uniting together to increase resiliency within the group or to help others (Bounds, 2020). Among the unaffiliated, many members of the spontaneous Cajun Navy that pop up after natural disasters in the US could be part of this species as well as several residents of Hong Kong.[113]

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[110] https://www.merriam-webster.com/dictionary/interdependent.
[111] https://www.thesaurus.com/browse/interdependent.
[112] The existence of such a large entity such as the Zombie Squad goes directly against the depiction by Dominants that preppers are selfish and insular.
[113] This is based on anecdotal conversations the author has participated in with those of Hong Kong citizenship and videos such as https://www.youtube.com/watch?v=FpSKb-xrGzg&ab_channel=%E6%9E%9C%E7%B1%BD.

The Interdependent seem to have the largest collection of prepping advocates as well – at least among the leadership – who are public about their activities, contrary to the secrecy seen in some other groups. Jason Charles, leader of the NYCPN, is often interviewed by national media outlets such as the *New York Times*. Their presence is also explained – at least tangentially – to community resilience measures and activities (Adger et al., 2005; Gil-Rivas & Kilmer, 2016; Norris et al., 2008). It is a philosophy that you are only as good as your weakest link. To raise the level of resilience of others where you live is a mixture of altruism and self-protection. In fact, public involvement in disaster preparedness might be one of the best ways to inculcate a spirit of togetherness. In a fascinating study, researchers brought together members of the local populace for disaster tabletop exercises, a scenario-based operation common from local to national level planners. Rather than begin with a catastrophe though, the researchers started by having people list community assets; things worthy of protection (Freitag et al., 2014). Instead of focusing on vulnerability, the members present were guided to look at their town's assets and strengths. Whether or not these exercises led to increased personal preparedness was not examined, but it is this same spirit that motivates the Interdependent.

Who would not be included? Your neighbor with a snowplow that digs out your driveway after a blizzard probably does not make the cut. Neither does every off-duty firefighter you meet or the academic who writes habitually on the subject of disaster preparedness. Homesteaders, like the off-grid community discussed earlier, and members of the Faithful, like the Mormons, are clearly concerned with community. But they are better illustrated by other factors. Again, heuristics only take us so far.

5. Noah

The final group of resilient citizens often fear the largest events: nuclear war, an electromagnetic pulse (either via solar flare or manmade), virulent pandemics, nation destabilizing social unrest, etc. While they may own land like Homesteaders, await the Messiah's return like the Faithful, or own guns like the Sentinels, they have something even beyond that: a bunker. These preppers are Noahs. Of the five subtypes, they are usually the hardest to interview and study, especially among the exceptionally wealthy. They can also be seen as the antithesis of The Interdependent, as Noahs often retreat to their own fortified enclaves rather than help the collective.

At the upper end, where money can buy security, some Noahs are the glampers of the prepping world. It is *Lifestyles of the Rich and Famous, Disaster Edition.* Survival Condo is a well-known US site by both journalists (Osnos, 2017) and academics (Garrett, 2020b). It is a refurbished nuclear missile silo in Kansas with a swimming pool, shooting range, movie theater, and medical bay; a veritable sword into plowshare abode. Accommodations here start at $1 million. This concept is catching on internationally with Vivos Europa One[114] and other venues. Resilient citizens, especially those of higher incomes, may also be emblematic of Nassim Taleb's convexity principle. Taleb states certain actions have low downside, but explosive upside (Taleb, 2018). Going overbudget on a luxury home to add high end security and preparedness features is not much additional money comparatively speaking, but if there was a large

[114] https://terravivos.com/secure/vivoseuropaone.html.

calamity, those extra dollars pay off handsomely. Osnos saw this when writing on the upper income echelon as well. Quoting Yishan Wong, a former CEO of Reddit:

> "Most people just assume improbable events don't happen, but technical people tend to view risk very mathematically." He continued, "The tech preppers do not necessarily think a collapse is likely. They consider it a remote event, but one with a very severe downside, so, given how much money they have, spending a fraction of their net worth to hedge against this . . . is a logical thing to do" (Osnos, 2017).

Although, at least among the Silicon Valley and Wall Street crowd, it could simply be a factor less of risk calculation and more of keeping up with the millionaire Joneses next door. Or, it could be seen as a continuum. Panic rooms are for criminal break-ins and are part of the castle mentality among many rich (Atkinson & Blandy, 2016), but it is not a large jump to repurpose the concept to deal with several other disasters such as terrorism or social unrest.

Those with deep financial pockets can even pursue a country-as-bunker concept, that is fleeing their homeland for safer locales. New Zealand is a top choice, and some of these ultrarich build bunkers in conjunction with their refuge destination (Bowles, 2020; Durden, 2020a; Ghaffary, 2020; O'Connell, 2018). For those with more limited means, several outfits (e.g., Vivos, Fortitude Ranch) indicate bunker spots are still available at places across America – some at former military areas that are now communal disaster locales.[115] There is also a region-as-bunker concept. In America, the prepping community discusses the "American Redoubt," an area that includes Montana, Idaho, Wyoming, and the eastern halves of Washington and Oregon.

[115] See https://www.terravivos.com/, or https://fortituderanch.com/.

And for those not wanting to move, numerous companies (e.g., Rising S Bunkers, Atlas Bunkers, Hardened Shelters) all offer at home bunker solutions with prices ranging from the low tens of thousands to the millions of dollars. In the past few years, business is flourishing (Durden, 2020c; Lockett, 2020; The Economist, 2019). The concept itself is not new though; fallout shelters came about due to the nuclear age, as noted in Section Two. Today's versions, to those that possess them, are modern-day arks, and the Noah analogy is habitually used to described both the motivation and the antiphon (Garrett, 2020b).

Household bunkers are international as many are relics of the Cold War. The most famous are in Switzerland, a country whose laws mandate possession of such a structure or for citizens to pay a tax for a spot at a community shelter. Not all are built for atomic fears. Today, Israel is taking a Swiss approach to becoming a bunker dense country. Israeli law stipulates new residential buildings must possess a *mamad* (a Hebrew acronym that translates into Residential Protected Space) (Shapiro & Bird-David, 2017). The authors note that although shelter creation there started in 1951, incidents such as the Gulf War and the Israel-Hamas war of 2014 keep the threat of disaster relevant. Government inducement to build home bunkers is nothing new. Air-raid shelters were commonplace in Britain during World War II. From 1939 to the end of the war, 3.6 million Anderson Shelters were installed in the backyards of UK homes.[116] Today, even foreign elections can induce a bunker desire. Canadians afraid after Donald Trump's election snapped up bunkers created by American builders . . . just in case (Warren, 2017).

Not all who possess these structures are apocalypse minded, but they still fear common disasters or even mass crime events. Their desire for ontological security is akin to the

[116] https://www.andersonshelters.org.uk/history.html.

doomsday crowd, as is their action; it is just a difference of threat. Tornado shelters are an excellent example as they are ubiquitous across "tornado alley" in the US. Also related are panic rooms or urban bunkers to protect oneself from crime.

As to the taxonomy of Noahs, who does not make the cut? For Criterion One and Two, not every rich individual with a panic room and a week's worth of MREs (Meals Ready to Eat) is a resilient citizen. Fearing a home burglary is one thing; fearing *The Purge* is another. Also excluded are state actors such as military continuity of government personnel working at sites such as Cheyanne Mountain (NORAD) in Colorado Springs. On a lower scale, military residents of Fort Riley or Fort Leavenworth are provided at home basements or shelter rooms for tornados, but these are given due to the state actor position of the servicemember and not by individual private action. Globally, those who have protected enclosures for storm surges, burglaries, and other traumatic events might own these structures for acute events that are over quickly. Still, without a 31-day supply of food, my criterion would not count them as resilient citizens.

V. Conclusion

Society has evolved beyond primitive man fearing a saber-toothed tiger in the bushes or the hostile tribe on the other side of the mountain to an influx of, quite literally, global threats. There are myriad perils that fall across many bands: natural to manmade, individual to global, and acute to chronic. How people react is just as diverse, and some choose to take extraordinary steps. These individuals at the utmost levels of preparedness are known by many names, but today's common terms are survivalists and preppers. Although the topic has been

debated for over forty years, there is still much confusion. What differentiates two people who both own shotguns and 100 rolls of toilet paper; why is one a hoarder but the other a prepper? Why do some preppers build bunkers, whereas others plant crops and raise chickens? Also, is there any straightforward guideline to weed out extremists? I have provided a general model to make sense of all of this. I have taken three criteria: 1) days of preparedness, 2) ontological security actions (and inaction), and 3) an extremist ideology exclusion criterion to accomplish this goal. I also expounded upon them to explain five common typologies commonly seen in both media and academic realms and expanded understanding of the term *resilient citizen* to indicate clear divisions.

Knowing and understanding this is critical to further discussion. I offer a few parting thoughts. First, if the Dominant narrative remains, there will be losers. If disaster preparedness, even at "extreme" levels, is both a public and a private good, if it increases resiliency, and if it contributes to peace of mind, then it is also counterproductive for many journalists and academics to "other" preppers into an exaggerated negative typecast. How does creating a psychological wall against preparedness assist women or minorities? For example, by casting preppers as racists, scholars can push minorities and many others away from the benefits that even lower levels of disaster readiness bring (healthy eating, community betterment, resiliency, mental health, etc.). Henry found prepper negative stereotypes travel internationally in his study on Australian preppers. Clearly, extremists should be eliminated methodically, and I have indicated a pathway forward to that end.

Second, to date, no academic has yet studied the motivations of liberal preppers under President Trump with ideology as a factor in the way that Mills has done for conservatives

under President Obama.[117] But from what is currently reported, it appears the rationale – and for some, a pot-meet-kettle rhetoric of hypocrisy – is quite similar. Perhaps due to stigma, those who are left-of-center fear the connection to big-S Survivalism to be a larger hurdle in discussing prepping than those on the right. But prepping seems to be a bigger tent than the Dominant portrayal has shown. Even Foster had to admit in her research that, at least for those selling survivalist wares, the marketers were actively against racism and courted women, liberals, and homosexuals (Foster, 2016).

Third, there seems to be other potential avenues for those desirous of pursuing quantitative or qualitative study beyond ideology. High net worth individuals have had several media articles regarding their prepping activities covered. Perhaps it is time for a scholastic endeavor? Another avenue is looking at government disaster mitigation guidance. Several countries publish pamphlets and disaster preparedness guidelines. Do the types of hazards governments warn about impact individual action? Is there variation in the length of preparedness recommended and does this correlate with higher or lower days of preparedness? Due to national laws regarding hardened shelters, should we expect more resilient citizens in Switzerland or Israel as compared to France or South Korea? Relatedly, are attitudes on government capability correlated with individual preparedness levels? If state capacity rises as a function of resiliency, negative portrayals of preppers could be counterproductive.

Fourth, what of model testing? As I have indicated previously, protection motivation theory now has at least one quantitative article on preppers. A repeat of that survey, but using

[117] Even Mills acknowledged this gap in his own work.

my model, would be illuminating. So too would taking my model internationally for further confirmation, or refutation. As discussed, the preponderance of prepper literature is American in focus. What would be the findings of taking Henry's Australian survivalist 12-step pathway and applying it to American Sentinels? Also, if my model is correct, which variable is most powerful: the disaster feared, the capabilities – or incompetency – of the government, or an individual's personal means that is most explanatory?

Regardless of how future scholars proceed, one trend is clear: the further one goes from observation of actual highly prepared individuals, the more hyperbolically they are portrayed. For example, scholars' film and television reviews are overwhelming slanted to extremely negative portrayals; on-ground embedded research is mixed or even positive. Many non-extremist preppers are exceptionally inclusive and readily encourage others to engage in the lifestyle. They have skin in the game, are community oriented, and have an end goal of increasing the resilience of others. Due to the ubiquitous nature of large-scale disasters and the interconnectedness of the world today, we should listen.

Chapter Appendix A: Army Regulation 600-20

Paragraph 4–12. Extremist organizations and activities

Participation in extremist organizations and activities by Army personnel is inconsistent with the responsibilities of military Service. It is the policy of the United States Army to provide EO (Equal Opportunity) and treatment for all Soldiers without regard to race, color, religion, gender, or national origin. Enforcement of this policy is a responsibility of command, is vitally important to unit cohesion and morale, and is essential to the Army's ability to accomplish its mission. It is the commander's responsibility to maintain good order and discipline in the unit. Every commander has the inherent authority to take appropriate actions to accomplish this goal.

This paragraph identifies prohibited actions by Soldiers involving extremist organizations, discusses the authority of the commander to establish other prohibitions, and establishes that violations of prohibitions contained in this paragraph or those established by a commander may result in prosecution under various provisions of the UCMJ. This paragraph must be used in conjunction with DODI 1325.06. DA Pam 600–15 provides guidance in implementing Army policy on extremist activities and organizations.

a. Participation. Military personnel must reject participation in extremist organizations and activities. Extremist organizations and activities are ones that advocate—

(1) Racial, gender, or ethnic hatred or intolerance.

(2) Creating or engaging in illegal discrimination based on race, color, gender, religion, or national origin.

(3) The use of force or violence or unlawful means to deprive individuals of their rights under the United States Constitution or the laws of the United States, or any State.

(4) Support for terrorist organizations or objectives.

(5) The use of unlawful violence or force to achieve goals that are political, religious, or ideological in nature.

(6) Expressing a duty to engage in violence against DOD or the United States in support of a terrorist or extremist cause.

(7) Support for persons or organizations that promote or threaten the unlawful use of force or violence.

(8) Encouraging military or civilian personnel to violate laws or disobey lawful orders or regulations for the purpose of disrupting military activities (subversion).

(9) Participating in activities advocating or teaching the overthrow of the U.S. Government by force or violence, or seeking to alter the form of government by unconstitutional means (sedition).

Chapter Appendix B: One year of emergency food for one person (reprinted from the LDS Preparedness Manual: Book Two, Temporal Preparedness, General Member Edition)

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CHAPTER FOUR

Nowhere to Run to, Nowhere to Hide: Disasters, Preparedness, and the Shadow of State Failure on US Islands

I. Introduction

"Global political economy is a field of study that deals with the interaction between political and economic forces. At its centre have always been questions of human welfare and how these might be related to state behaviour and corporate interests in different parts of the world. Despite this, major approaches in the field have often focused more on the international system perspective. A side effect of this has been the relative neglect of non-elites and an all-too-often missing recognition of ordinary individuals." - Günter Walzenbach[118]

While disaster is ubiquitous to the US, the disparate nature is wide-ranging. Just this century alone, the US has faced large-scale terrorist attacks (9/11), a pandemic outbreak (COVID-19), tornados (Joplin, Missouri), hurricanes (Katrina, Sandy, Rita), and wildfires (Camp Fire, California). Individual preparedness, in the face of these threats, is also varied. There are many ways to demarcate how to split groups for comparison, but here I focus on one, the geographical difference of living on a US island compared to living on the continent. Does that single variable change the readiness level of an individual? And if so, why? Simply stated: do island residents prepare for disasters at higher, lower, or equal rates than their mainland counterparts? This puzzle has remained unanswered due to a lack of data and is a clear gap in the academic literature.

I find that living on an island has a major positive impact (between 40-135%) on disaster preparedness, and yet the two models I use in this chapter do not account for this. Adding my island variable improves the explanatory power of FEMA's model in two separate tests and the Meyer-Kunreuther model in one test with negligible change in the second. I contend the island variable I add serves as a proxy for individual's thoughts on their personal vulnerability and the

[118] As quoted in (McGlinchey (Editor), 2017).

shadow of state failure under larger scale disasters. I execute a plausibility probe using multiple extreme catastrophes to support my claim.

This chapter weaves together three areas of research, two in general and one for specific application here. The first is political science. I look at state failure and human security from this arena, emphasizing the latter in the subfields of personal and economic security. In doing so, I thus give it salience within the field of political economy. The second area woven in is disaster preparedness. This portion discusses key terminology and two theories to explain why Americans do or do not take mitigating actions in the face of potential calamity. These two fields are the overall foundation. To narrow the scope to the comparison of the topic at hand, the puzzling anomaly of US islander preparedness, the third tie in is information regarding Small Island Developing States (SIDS), specifically in their exposure history and the impact from catastrophic events that are national in scale and effect.

While this chapter references international security and political economy writ large, human security is used here because its focus is on the micro; the individual. Using this approach allows a smoother linking to the disaster preparedness literature as one can now connect units of analysis at the same level, again, the individual. Information from SIDS studies applies key background context since I am querying the effect of the geographical differences between continents and various islands.

A. Contribution and significance

I make two contributions to the nexus of research on human security and disaster preparedness. The first is analytical and the second is theoretical. For analytical, by parsing out

FEMA data, I add hard data to the literature regarding preparedness levels at both a macro and micro level. I show correlations of factors related to these preparedness levels and indicate that one of FEMA's own independent variables and their overall model for preparedness do not quite match the results from their predictions for their survey. The comparison model from risk researchers Robert Meyer and Howard Kunreuther has issues to overcome as well.

Switching to the theoretical component, I suggest there is a potential omitted variable or collection of variables that deserve further scrutiny to solve this issue: that of the interaction (or better specification) among state failure, risk perception, and disaster severity. I theorize that US island residents prepare at higher levels for disasters due to the likelihood of sub-national state failure, a theme that appears from both traditional disaster research and the prepper literature. This failure comes on two related fronts. First, islands face a higher probability of a catastrophe impacting most or all of the entire landmass due to their size. While nations can take steps to reduce or even prevent smaller disasters such as flooding, terror attacks, chemical spills, or food contamination, they cannot thwart hurricanes, earthquakes, or volcanic eruption.[119] Because of these limitations, islanders face *systemic* level impacts from just a single event, one of near totality and no – or few – safe areas to flee to for the masses. Secondly, because of the magnitude of these larger-scale disasters, state capacity – and for clarity I am referring to US states and territories – is often completely overwhelmed analogously to SIDS country-level failures. There are large-scale power outages, infrastructure

[119] The United States National Planning Scenarios, posited hazards America has or will face, run the gambit of disaster size; from something small like the detonation of an improvised bomb (e.g., the Boston Marathon bombing) to a nuclear detonation or pandemic. Thus, even small events can be a representation of state failure via the definition I use below.

damage, limited transportation avenues, and degraded communications. The sub-national state is therefore not up to the full task of disaster response. Based upon the separation of hundreds, or even thousands of miles, help, and recovery assets are not just physically distant but temporally distant as well.

My research contributes by providing a potential causal explanation channel *via individual action in response* to this security and economic conundrum. I propose that, *ceteris paribus*, this state failure probability forces more islanders to confront their vulnerability. Therefore, they attempt to fill this void via the gathering of additional emergency supplies to shelter-in-place. Self-sufficiency is encouraged due to geography. With nowhere to run to and nowhere to hide, I argue island residents are motivated to take action on emergency measures to increase the amount of time they can last while awaiting outside aid. I fill the omitted variable lacking in the FEMA and Meyer-Kunreuther model with a proxy: island or continental status.

B. Format of the chapter

The chapter is organized as follows. I showcase the links among the three streams of human security, disaster preparedness, and Small Island Developing States (SIDS) for a background. Within human security, I provide a broad definition of state failure that connects well with various hazards. I then tie this definition to a portion of the disaster literature, including key terms. I show that most US citizens are a rather low resilience group and introduce two theories to explain variation in their readiness efforts. Next is the SIDS information, which showcases the vulnerability of these populations to larger-scale disasters.

In the data and analysis section, the FEMA dataset is introduced, and the two theories, that of FEMA and of Meyer and Kunreuther, are tested against several hypotheses. The strengths and limitations of each are shown, and the puzzle is investigated. I conclude with an exploratory foray into a better explanation of why US islanders prepare at higher levels than those on the mainland.

II. Background: the three streams

A. Stream # 1) Human security and state failure

The United Nations Human Development Report of 1994 first introduced the term human security and tied it to calamity at inception. Since this document was written in the early years after the Cold War, the preeminent fears of a nuclear holocaust, global war between the USSR and the US directly, or smaller regional wars – either proxy or not – were receding from the forefront in the discussion of international security. In this vein, the document declares, "[f]or most people, a feeling of insecurity arises more from worries about daily life than from the dread of a cataclysmic world event" (United Nations Development Programme, 1994). The report listed several sub-components of human security, such as economic, environmental, and personal security. Thus, the unit of analysis switched from nations to the smallest level possible: individuals. This description also provided another connection point between international security and political economy, just as Civil Defense and national military production capacity had done in previous years. Nevertheless, the relation of all these sundry "securities" was opaque.

In 2001, Roland Paris published a matrix of security studies to demonstrate the

relationship between the source of the security threat and the entity of protection, as depicted in Figure 1.

Security for Whom?	What Is the Source of the Security Threat?	
	Military	Military, Nonmilitary, or Both
States	Cell 1 National security (conventional realist approach to security studies)	Cell 2 Redefined security (e.g., environmental and economic security)
Societies, Groups, and Individuals	Cell 3 Intrastate security (e.g., civil war, ethnic conflict, and democide)	Cell 4 Human security (e.g., environmental and economic threats to the survival of societies, groups, and individuals)

Figure 1: Threat and Security Matrix
Source: (Roland Paris, 2001)

Part of Paris' purpose in doing this was his belief that the term had become so malleable that it was losing meaning.[120] Where his matrix is assistive here is connecting multiple threat types, *all* of which have a bearing on individuals (earthquakes, civil war, conventional war, banking and currency collapses). And, critically, showing that states cannot prevent all forms of peril. Thus, human security, when approached holistically, has gone full circle. While it still incorporates "worries of daily life" (e.g., hunger or job opportunities), it likewise retains a connection to "cataclysmic" events with death or economic ruin as outcomes.

[120] For example, he cites the large gap between Japan's definition and Canada's for human security.

Therefore, where my research furthers the debate is not on the human security's definition or development, but rather its conceptual connections to disaster preparedness.[121] At its base, security is about the diminution of harm. However, because harm can come in various forms and scales, not all can be prevented. Life does not have to be nasty, brutish and short, but it also cannot be worry-free, bucolic, and infinite. Because threats can still be from manmade sources (e.g., terrorism or war), traditional security concerns are *additive* to the natural disaster preparedness linkage. A nation cannot thwart all forms of hazards from impacting people. Mitigation steps are required, and responses must be planned to deal with the aftermath of disasters.

Hence, this prevention of all harm relates to one of the definitions of state failure, which takes a broader approach to the lexicon. Rather than the term "state failure" equaling "failed state," it can instead be described as the inability to provide basic services. I take my broad definition of state failure from Zartman and Rotberg, as summarized by Eriksen:

> "Both Zartman and Rotberg distinguish between a variety of services that states may provide, ranging from security to the rule of law, the protection of property, the right to political participation, provision of infrastructure and social services such as health and education. These services constitute a hierarchy, Rotberg argues. The provision of security is the most fundamental service states provide, in the sense that security is a condition for the provision of all other services. Rotberg also argues that failure should be seen as a continuum rather than as an either/or" (Eriksen, 2011).

This understanding of state failure fits nicely with disasters of all sizes. There is a temporary inability to respond for the sovereign or subnational state to render goods and services (power, medical assistance, the rule of law) *and* a permanent inability to stop – i.e., provide 100%

[121] The debate over the term "human security" is nowhere near complete (Breslin & Christou, 2015; Ryerson, 2010).

security prevention against – more significant catastrophes. Disasters of higher impact can scale with greater levels (either in scope or duration) of state failure.

In summation, using Zartman and Rotberg's framework, all nations fail, or are at risk for failure, at some point or another. By logical extension, sub-national states fail or will fail at some point or another. While both can take risk reduction measures, neither can provide total human security in physical or economic safety. Risk is still prevalent and some of that risk must be borne by the smallest unit, the individual. With this reference basis, I now move into the second field.

B. Stream # 2) Disaster Preparedness

The 2015 Sendai Framework for Disaster Risk Reduction is the current baseline document for the United Nations and is widely adopted across the globe (United Nations Office for Disaster Risk Reduction, 2015). The definitions it provides for resilience, vulnerability, and hazard; and from a second source, that same organization's definition for capacity, are used here.[122] For the term disaster, the International Federation of Red Cross and Red Crescent (IFRC) defines it as:

[122] **Resilience**: "The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions." **Vulnerability**: "The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards." **Hazards**: "A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards) (United Nations Office for Disaster Risk Reduction, 2015). **Capacity**: "The combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience" (https://www.preventionweb.net/terminology/view/7831).

> "[A] sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins" (International Federation of Red Cross and Red Crescent, n.d.).

This disaster characterization complements the human security and the state failure concepts introduced previously. There is physical and economic harm, an inability to prevent, and a component of overwhelming impact. The relation of these terms can be depicted using this IFRC model:

(Vulnerability + Hazard) / Capacity = Disaster (Ibid)

As an overview, hazards are manmade and natural threats that may or may not interact with humans. A mudslide in a remote area is a hazard. Some hazards, however, do interact with humans. Various models then code vulnerability or capacity as abilities to resist that hazard. For example, a community in Iceland may have low vulnerability and high capacity to prevent deleterious effects from a snowstorm. A hazard becomes a disaster when it overcomes an individual or community's vulnerability level or capacity to resist. Also, whereas vulnerability is an attribute prior to a disaster, resilience incorporates features before ("resist"), during ("absorb"), and after ("accommodate to and recover from") a disaster. Individual, municipal, or state preparedness is, therefore, a component of resiliency. Higher preparedness correlates to higher resiliency.

Looking at the United States, the current FEMA template of action is its 2018-2022 Strategic Plan. Of the three strategic goals listed, in the position of primacy at number one is to "Build a Culture of Preparedness" (US Federal Emergency Management Agency, 2018). "Strategic Goal 1 promotes the idea that *everyone* should be prepared when disaster strikes"

(emphasis added). This promotion of preparedness is not limited to casualty reduction but also contains a heavy monetary element. The plan underscores the need for insurance, the increased costs of disaster, the realities of the federal fiscal environment, and most importantly, the six-to-one cost savings of pre-disaster spending (Ibid).

FEMA's second strategic goal is to "Ready the Nation for Catastrophic Disasters." Notice the focus is not on landslides or run-of-the-mill events, but for *catastrophic* events. But America fairs poorly in this regard. Some of the more ubiquitous issues as to why institutions fail to prepare adequately are normalcy bias, low political will, and a lack of focus on disaster preparedness with most energy instead looking at planning for disaster response rather than mitigation or planning efforts (Flynn, 2007; Kunreuther & Michel-Kerjan, 2011; Kunreuther & Useem, 2010).

Why do Americans prepare (or why don't they)?

With this "Culture of Preparedness" goal in mind, how do American's fare? Over a decade of FEMA and other's surveys indicate that between 30-80% of Americans have the recommended fully stocked three-day emergency supply kit (Ellis, 2016; US Federal Emergency Management Agency, 2020). This base level is a minimum. Other organizations go much further in their recommendations for at-home supplies. The American Red Cross endorses the standard of a two-week home kit (American Red Cross, n.d.), but my analysis of FEMA's 2018 National Household Survey (NHS) data shows that 75% do *not* possess this amount. Thus, a high vulnerability and low resilience level individually across the nation is the norm, not the exception. What then are the components that come to play in explaining or predicting

individual preparedness?

In the 2018 NHS executive summary, FEMA asked the question, "What are the key influencers to hazard preparedness"? They answered with four categories and a total of five variables that they believe direct "a person's decision to begin preparing for a future hazard" (US Federal Emergency Management Agency, 2020). The four categories and their descriptors are as follows. 1) Awareness of Information. This includes official or unofficial messaging or media received in the past six months for disaster preparedness. 2) Experience with Disasters. Have they personally experienced a disaster or has their family? 3) Preparedness Efficacy. This has two measurements. The first is a belief that "preparing can help in a disaster" and the second is a confidence "in their abilities to prepare". 4) Risk Perception. Is it likely that at least "one disaster type could impact where they live" (Ibid)? Unfortunately, until late 2019 and early 2020, FEMA only released certain summary statistics on their findings. With no data to analyze outside the organization, scholars were unable to conduct research to determine which of these influencers were most correlated or if there was plausible causation. Now that the data is open source, what I call the FEMA's Influencer Model (FIM), expounded on in section three, can be tested.

A second theory comes from two professors at the University of Pennsylvania. Robert Meyer is a professor at The Wharton School and an Insurance Professor of Marketing. He is the co-director of the Risk Management and Decision Processes Center at this locale. His coauthor (and co-director of the same center), Howard Kunreuther, is a professor emeritus and has written extensively on risk and catastrophe with a special emphasis on low-probability, high consequence events. Their book *The Ostrich Paradox* lays out six biases that impair action or

disaster preparedness: myopia, amnesia, optimism, inertia, simplification, and herding (Meyer & Kunreuther, 2017).

A paraphrasing of the Meyer-Kunreuther model's (abbreviated hereafter as the M-K model) description of these impediments is as follows: 1) Myopia. People think in short time horizons and have difficulty conceptualizing how current action now can mitigate risk later. There is a mental battle between the concrete now and the abstract potential future. 2) Amnesia. People quickly forget the "hedonic impact of past losses". The authors cite the rapid rise in flood insurance purchases after Hurricane Katrina and then a drop to "pre-Katrina levels three years later." There is also an emotional cost to preparing coupled with a subsequent false alarm; a "cry wolf effect." 3) Optimism. Stated simply, this is a belief that an event will not happen or will not be severe enough to require mitigation. It is the "underestimation of cumulative risk" to an individual.[123] 4) Inertia. Making "no choice at all" is maintaining the status quo, the "default option." Change is hard. 5) Simplification. The human brain often equates doing something with doing enough. The authors cite the example of the FEMA recommendation to acquire "food, water for three days, extra batteries, and so on. Yet once the first action is taken, say, extra food secured, there will be a natural tendency for our brains to see the problem as having been solved." 6) Herding. Humans follow the cues of those around them and like them. It is challenging for individuals to buck social norms.[124]

[123] Or what Nassim Taleb has deemed "ensemble risk". Taleb describes this as repeat play of risk for a single person, not a collection of people (see his book *Skin in the Game*).

[124] Clearly none of these six biases are new to the literature, not just for disaster, but many other fields. However, for those seeking further reading regarding these psychological predispositions in relation to risk can refer to several other books. See for example Nassim Taleb's *Incerto* series, *Worst Cases* by Lee Clarke, *The Edge of Disaster* by Stephen Flynn, *Foolproof* by Greg Ip, *The Logic of Failure* by Dietrich Dörner and *Learning from Catastrophe* by Howard Kunreuther and Michael Useem.

While Meyer and Kunreuther provide the background foundation, their book does not test the theory in the wild. The FEMA dataset, however, provides proxies to assess the strength of the proposals. For now, since neither FIM nor the M-K model incorporate geographical location as a key independent variable, at least one assumption should be that US island residents prepare at rates equal to their mainland counterparts.

C. Stream # 3) Islands: Vulnerability and capacity

Before presenting the methodology and analysis of US island and territory residents, I discuss here a baseline group for comparison. There are 52 designated locales, not all of which are sovereign entities, which comprise the collection of Small Island Development States (SIDS). For example, Puerto Rico, Guam, and the US Virgin Islands are all SIDS and territories of the United States, whereas Bahrain, Cuba, and Tonga are independent countries. Hawaii is not considered a SIDS. While the SIDS are global, the majority (23) are located in the Caribbean, 20 in the Pacific Ocean, and the remaining nine scattered elsewhere.

There are multiple commonalities in Small Island Developing States and continental nations' attitudes and actions regarding disaster planning, preparedness, insurance, and other policies.[125] Here though I highlight two aspects that pose unique dissimilarities and increased risk for islands over continents: the components of vulnerability and capacity as described above. The critical connective tissue between both is that of increased systemic risk in islands. Systemic risk occurs "when a hazard will not only lead to negative effects in parts of the system, but also to failure of the system as a whole" (Schweizer, 2019).

[125] See for example (Aerts et al., 2014; Berke et al., 2015).

Physical and Economic Security Vulnerabilities

Island residents face several inimitable challenges regarding disaster, although two stand out: disaster scope and physical isolation. First, based upon their smaller size and geographical composition, the proportional impact of a disaster on the landmass and population is greater than that of most continental-based countries (Shultz et al., 2016). For the same reasons, there is also a radical reduction in unaffected safe haven locales. For example, looking at the Pacific island country of Tuvalu, there does not topographically exist an area high enough in elevation that is outside the range of a tsunami risk (Taupo, 2018).

By one estimate, from 1980-2018, the top four highest death tolls from catastrophes have either been on an island or from an oceanic event that hit a coastal area (Duffin & Worldatlas.com, 2019).[126] During that same time period, eight of the top ten economically costly disasters also involved either islands or oceanic/coastal events; five were hurricanes (Duffin & Munich Re., 2019). One study from two International Monetary Fund (IMF) workers found that of the 511 disasters that struck small nations or territories (places with less than 1.5 million residents) after 1950, 324 of these occurrences were Caribbean SIDS (Ötker & Srinivasan, 2018). A similar study from the IMF placed the economic and physical vulnerability levels in stark contrast. Figure 2 graphically depicts the findings that disasters hit small states

[126] Ranked by deaths, they are the 2004 Indian Ocean earthquake and tsunami, the 2010 Haiti earthquake, Cyclone Nargis (Myanmar) in 2008, and the 1991 cyclone that hit Bangladesh. Not all sources agree on death toll accounts though. For example, just for the Haitian earthquake the range of casualties is between 100,000 and 316,000 as per the US Geological Survey (https://web.archive.org/web/20130507101448/http://earthquake.usgs.gov/earthquakes/world/most_destructive.php).

more frequently and with a higher GDP cost, than mainland countries, especially SIDS in the Caribbean.

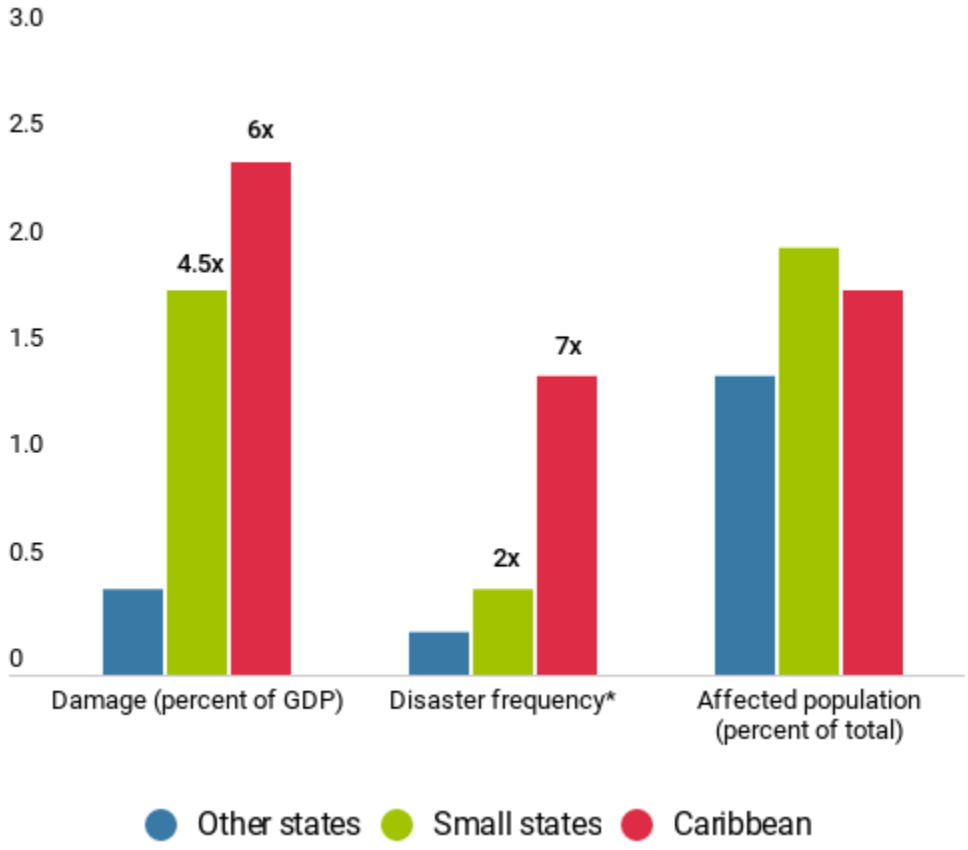

Figure 2: Natural Disaster vulnerability and cost: Caribbean SIDS, small, and other states (1990-2014)
Source: (Muñoz & Ötker, 2018)

And yet another IMF working paper, this one focusing on Pacific Island Countries (PICs), indicated that from 1980 through 2016, there was an aggregate likelihood of 34% per year of a disaster striking a PIC with 10.7% of the populace affected and an economic hit of 14.4% of GDP (Lee et al., 2018).

Within disaster scope, there is the further burden of choosing for which catastrophe should one prepare? Is it better to live in a wooden structure with a light roof? This is far more

resistant to earthquakes but offers weak protection for hurricanes and typhoons and it poses a higher fire risk for blazes sparked by failing power lines, candles, and lamps from an earthquake. By contrast, a concrete home is more fire and hurricane-resilient, but if built improperly – which is common in more impoverished locales (Muir-Wood, 2016) – becomes a collapsing sarcophagus in an earthquake. The Haitian earthquake illustrated below underscores this challenge. It can also offer a false sense of security at lower elevations if a typhoon brings a storm surge; people could be trapped and drown in their homes.

In addition, islands are typically tourist destinations. Governments and people face a one-two punch in a monetary sense, the first is the cost of disaster recovery, and the second is a decrease in GDP or household income based on fewer visitors and loss of work (Ötker & Srinivasan, 2018; Seraphin, 2019). Some SIDS also grow crops either for local consumption or export, so food scarcity and trade can be exacerbated in the days following a calamity. Additional examples underscore these facts. In 2017 Hurricane Irma destroyed half of the hotel rooms in the British Virgin Islands, Dominica lost a full year's worth of income and 95% of its vegetation, and the cost of Hurricane Ivan in 2004 to Grenada was twice its annual GDP (Seraphin, 2019).[127] So, state capacity is reduced by a combination of items: the physical damage, death toll, and injury; the costs of rebuilding; and the drop in revenue from loss of agricultural produce or tourist dollars. Many SIDS struggle with debt due to repeated events, thus further reducing the capacity for mitigation measures and exacerbating individual through national finances.

[127] For another example, the economic hit against Anguilla for Hurricane Irma was reported at $200 million, an amount greater than the country's entire budget (https://www.thesun.co.uk/news/4360755/hurricane-irma-anguilla-florida-tropical/).

The second unique challenge is that, being surrounded by the ocean, fleeing and recovery is more difficult. This factor is physical isolation (Shultz et al., 2016). Whereas residents of continentally based small states such as the Vatican, Lichtenstein, or Singapore can face countrywide threats due to their size, residents still have the option of land-based evacuation. In a worst-case scenario, they can simply walk to safety. Island residents cannot. The same logic applies to incoming aid. After Hurricane Katrina hit New Orleans in 2005 and Hurricane Harvey flooded Houston, the "Cajun Navy" – a hodge-podge of unaffiliated volunteers – swarmed the area to provide assistance above and beyond state, national, and non-governmental organization aid. While volunteers also came to Puerto Rico following Hurricane Maria, their numbers were limited by aircraft requirements.[128] Speed and scale are impacted by mode of transport, with maritime vessels being the slowest, and air delivery – while speedy – is restricted by lower weight allowances relative to ground and sea conveyance. To put this in perspective, in normal times, Hawaii receives 98% of its regular imports via sea, and 50% of these arrive at just one port: Honolulu Harbor (Prizzia, 2006). Severe damage to this single location from a natural or manmade event could cut aid inflow in half.

These two issues, disaster scope and physical isolation, create a conundrum: should individuals increase their resiliency to negotiate the aftermath of a disaster better, or are such steps futile, given the probability of destruction?[129] Regrettably, I could find very little data in the literature regarding individual preparedness levels of SIDS residents, which indicates a clear

[128] The topography of Nepal acted in similar fashion after their April 2015 large earthquake.
[129] This choice is not unique to island residents, although the time delay of relief efforts is typically longer.

gap. However, several cases from historical events showed that resignation to fate is not unprecedented and may actually be common. A few illustrations demonstrate this.

In a follow-up study on Hawaiian residents after the 2018 ballistic missile false alarm,[130] the majority receiving the information believed it to be true and thought that they and others might die (DeYoung et al., 2019). While some later took steps to increase their resiliency, for example by buying iodine pills or extra food and water, many did nothing. One respondent captured the sense of fatalism, stating, "on this island there is nowhere to really hide" (Ibid). This attitude was similar to that of Philippine residents who faced Typhoon Haiyan in 2013. Having faced numerous storms before, "[s]ome people even laughed at the local government vans that ferried people from the coast to evacuation centers inland, thinking that their concrete houses could withstand the typhoon, not knowing that it would be the storm surge that would destroy them" (Ponce de Leon, 2019). The author noted the attitude of many was summed up as "If God wants to take us, then so be it!" (Ibid). While these two examples provide the normative mindset of a subset of individuals, there are also structural issues at play. Haiti serves as an illustration.

The 2010 Haiti earthquake killed 230,000 people in that country alone as compared to the 228,000 who perished in 14 *separate* countries from the 2004 Indian Ocean earthquake and tsunami (Dunbar et al., 2010). Figure 3 depicts the geographical swath of the Haitian quake. Geographically, over 20% of the country fell within the strong to extreme zones of shaking. And, given that the majority of the populace resided in or near the capital of Port-au-Prince, roughly 42% of the country's citizens (3.9 out of 9 million) were hit (U.S. Census Bureau, 2019).

[130] Described in more detail in section four.

The Haitian earthquake displaced 1.5 million people and, as of 2019, over 32,000 were still living in camps (Charles, 2020).

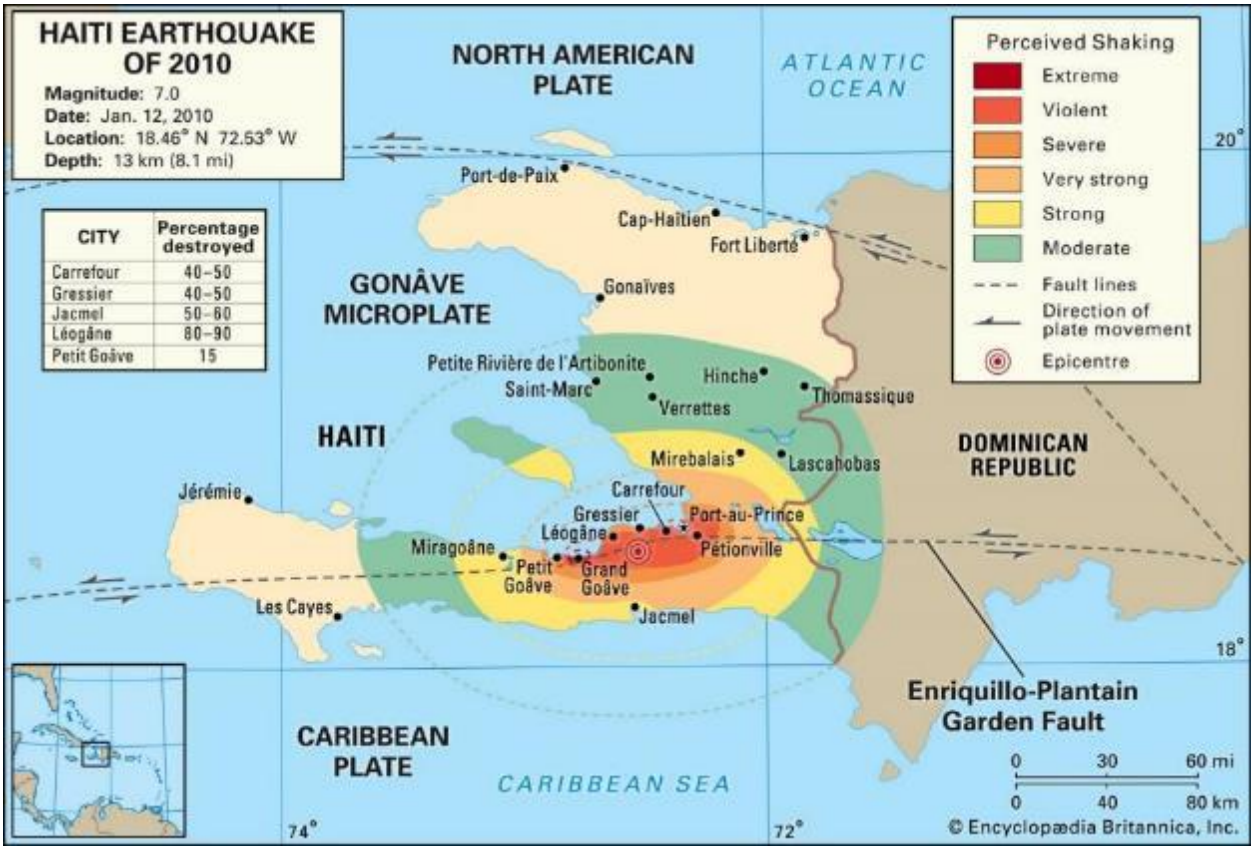

Figure 3: The geological distribution of the earthquake's severity
Source: (Pallardy & Encyclopedia Britannica, n.d.)

Figure 4 displays the movement and compositional size of the initial year's migration waves away from the zone of devastation. Compared to the Haitian destruction, the next highest death tolls for earthquakes were the 2004 Kashmir earthquake in Pakistan and the 2008 Sichuan, China earthquake that killed between 70-90,000 people each (Duffin & Worldatlas.com, 2019; Taylor, 2018). And while SIDS are the baseline group of understanding for my purposes here, even large islands are not immune. Juxtaposed against Haiti's displacements, the 2011 Sendai earthquake and tsunami that struck Japan led to a chain of

events that cascaded into the Fukushima Daiichi nuclear disaster. 550,000 Japanese were evacuated (Ishimori, 2017). Ishimori found 97,000 residents were still displaced in 2017.

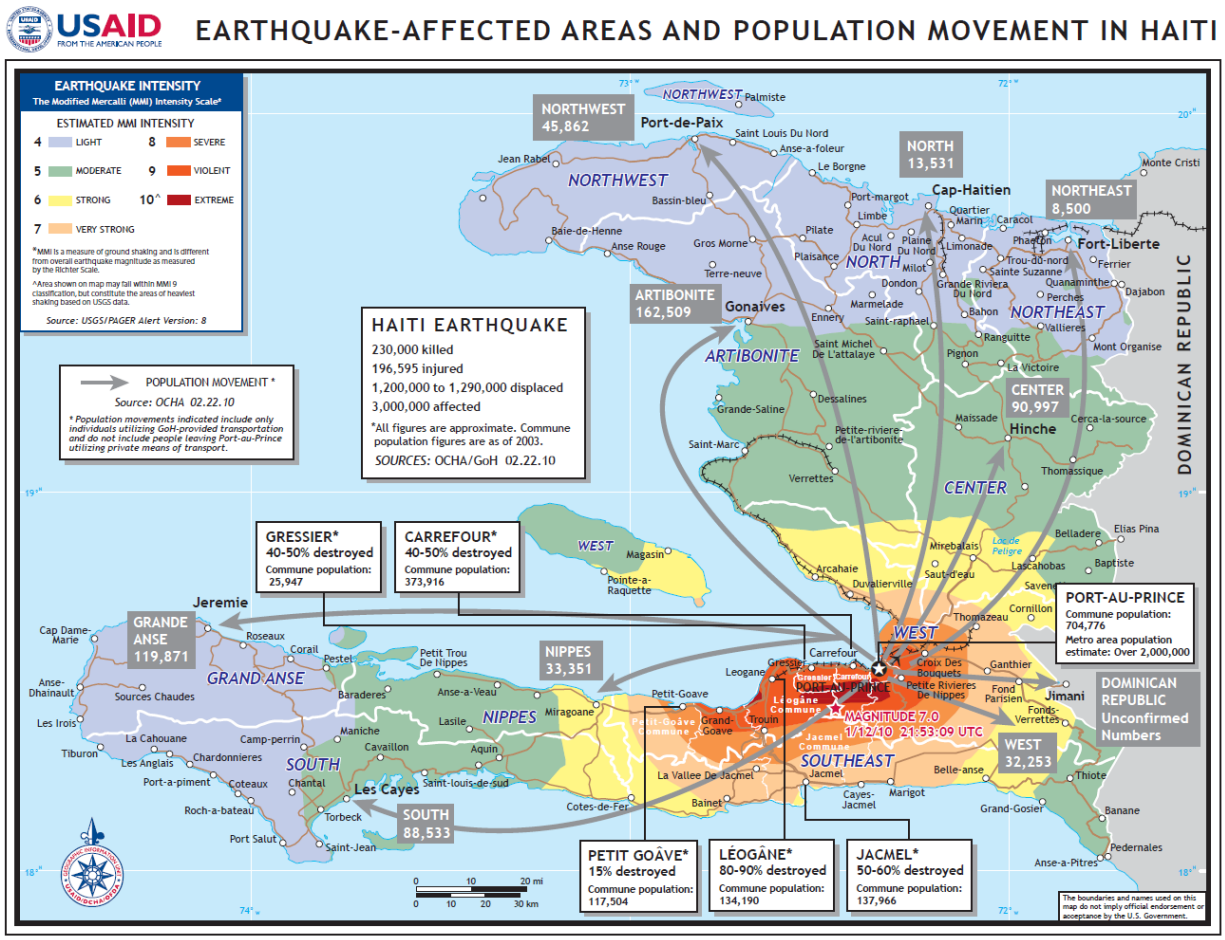

Figure 4: Haiti population dispersion following the 2010 earthquake
Source: Reliefweb (Earthquake-Affected Areas and Population Movement in Haiti and USG Humanitarian Assistance to Haiti for the Earthquake (as of 12 Sep 2010) - Haiti, 2010)

States take some steps

These Small Island Developing States are acutely aware of their precarious nature. Many have attempted the widespread after-the-event approach, just like the United States and other countries. One example is the Caribbean Catastrophic Risk Insurance Facility which addresses the economic fallout of a national level catastrophe discussed previously (Joyette et

al., 2015). With backing from the World Bank, this fund allows liquidity injects after an event (Ibid). While not a bad idea, it is a reactionary fund, one that kicks in after an event. It also highlights the fiscal limits of these small states. Additionally, although other small countries around the world are not islands (e.g., Belize, Togo, Qatar), transportation costs are exacerbated for islands both by distance and means of conveyance.

Less common, although still prevalent, are actions to influence societies and individuals, including cultural, social, and psychological change to increase resiliency prior to calamity. Kuruppu and Willie look specifically at SIDS in this milieu with several examples from the Pacific islands (Kuruppu & Willie, 2015). Holistically, from the 1992 Rio de Janeiro Earth Summit to the 2015 Sendai Framework for Disaster Risk Reduction (DRR), multiple DRR "milestones" – codified in 2015 as "Sustainable Development Goals" from 2015 through 2030 – are instrumental in assisting SIDS plan for and mitigate disasters (Shultz et al., 2016). Shultz annotates that the very first DRR principle is self-sufficiency (individual and community level).[131] And while this may be close to FEMA's "Culture of Preparedness" focus on the individual, risk communication is difficult in island countries as well. Ponce de Leon (cited *supra*) described how a breakdown in perception contributed to a higher death toll and multiple citizens' lack of action.

Moving to blended methods (states, international efforts, and individual responsibility), an example can be found in the Cayman Islands. The Cayman Islands in the Caribbean update their Departmental Disaster Control Plans and conduct hurricane preparedness exercises annually (Craig et al., 2006). When Hurricane Ivan hit the island chain in 2004, "70 per cent of

[131] In context, Schulz's wording is a bit ambiguous. He refers to community self-sufficiency which is a mix of individual and local actions, but for the purpose of supporting the nation by providing enough lag time for international support to arrive.

homes were severely damaged by the sea or by wind and rain" and only one supermarket on Grand Cayman was opened in the immediate aftermath (Ibid). Tompkins found that in the Cayman Islands, "self-efficacy, strong local and international support networks, combined with a willingness to act collectively and to learn from mistakes" increased resiliency in the face of disaster (Tompkins, 2005). A key element was *individual* cognition of the risks and then subsequent action (Ibid). Tompkins's subsequent research also indicated the critical need to integrate state and local action (Tompkins et al., 2008). But again, I discovered no research indicating the actual preparedness of individuals in these various SIDS, which makes my assumption of lower levels of islander resiliency presumptive rather than declaratory.

D. A summary of the puzzle

Before moving to the methodology and analysis, a summary is in order, with the foundations being set via the three streams of human security, disaster preparedness, and SIDS. Are residents living in US island states and territories more likely, less likely, or just as likely to be prepared for disaster than their mainland counterparts? Are there variations on the outcomes of interest?

There are three possibilities. First, maybe islanders simply aggregate around the same mean of preparedness as the rest of the United States. If this is the case, there is very little puzzle to solve. The disaster preparedness literature cited supra gives ample evidence behind why people fail to concoct plans and take steps to mitigate potential future disasters. This potential is summed up in Hypothesis 1.

*Hypothesis 1: Island residents' disaster preparedness, as measured a) by the presence of a three-day emergency kit or b) in the total days they could last in their homes without power, running water, or transportation, will be **equivalent** to the US mainland rates.*

Second, in contrast, because of previous events or perceived severity of future events, they prepare *less* for fear of losing their own lives or by the economic disincentive of anything they set aside for use after a disaster is destroyed. The SIDS data seems to indicate this as a plausible belief. This yields Hypothesis 2.

*Hypothesis 2: Island residents' disaster preparedness, as measured a) by the presence of a three-day emergency kit or b) in the total days they could last in their homes without power, running water, or transportation, will be **lower** than the US mainland rates.*

However, the absence of evidence from the SIDS literature does not, by default, mean there is no mechanism for island residents preparing at *higher* levels. The explanatory variables of the two models I test here may give insight. Therefore, if island preparedness rates are indeed higher, which model best explains it?

*Hypothesis 3: Island residents' disaster preparedness, as measured a) by the presence of a three-day emergency kit or b) in the total days they could last in their homes without power, running water, or transportation, will be **higher** than the US mainland rates.*

Hypothesis 3a: If island residents prepare at higher rates (three-day kit or total days) than the US mainland, the results are consistent with the FEMA Influencer Model (FIM).

Conversely,

Hypothesis 3b: If island residents prepare at higher rates (three-day kit or total days) than the US mainland, the results are consistent with the Meyer-Kunreuther (M-K) model.

As alluded to earlier, though, neither model takes geography into direct account, so this may be a common flaw in both. For more prolonged lead-time disasters like hurricanes, Floridians can be issued mandatory evacuation orders and physically drive to safer destinations. Residents of Guam or Hawaii do not have that option. For these latter examples, fleeing via air

is restricted by capacity and cost. However, not all disasters have a temporal notification. The recent Puerto Rico earthquake confirms this. Florida may also serve as the better baseline of comparison rather than the average mainland scores, given that Florida is the continental state most likely to face threats similar to those of island residence (namely hurricanes). While coastal counties of states such as the Carolinas or Texas may also face hurricanes, the entire state does not, so comparing all of Louisiana to Puerto Rico would provide inaccurate results. Do either the FEMA model or the M-K model adequately explain this? I show below that even taking Florida as the best comparison case actually strengthens the claim that state failure is a key explanatory variable for islander preparedness rates.

As a final point of comparison, the type of threat may come into play. The 2018 FEMA survey also included a nuclear risk component. Based on North Korean missile fears, do residents of Guam or Hawaii fear nuclear disaster more than their mainland counterparts? FEMA data has this information for places like Guam, Honolulu, and Miami. Do residents of these areas prepare out of fear of hurricanes or nuclear fallout at statistically discernable rates? Is there a connection between the disaster type and preparedness levels? With the table set, I now turn to the analysis.

III. Data and Analysis

A. The FEMA dataset

For several years, while FEMA has released aggregate summaries on household preparedness levels, they have kept the original source material sequestered, hindering much analysis. However, FEMA released raw numbers from their 2017 and 2018 National Household

Survey (NHS) for the first time.[132] While the 2017 investigation surveilled only the 50 US states, including Hawaii, the 2018 instrument included residents living in Puerto Rico, the US Virgin Islands, and Guam. Although FEMA shared an executive summary of the 2018 information, it is an averaging of all poll respondents (n = 5003). But the publication of the source information allows for a geographically based, granular analysis of this new dataset, querying for clues on similarities or discrepancies between island-based US citizens and their mainland counterparts. It also permits model testing.

The 2018 NHS was conducted via phone with a live caller (US Federal Emergency Management Agency, 2020). Raw data was released in January 2020. The population of 5003 respondents was composed of several subsets of individuals.[133] The main group of approximately 2000 people was a representative sample of all 50 US states, plus Washington D.C., Guam, Puerto Rico, and the US Virgin Islands.[134] In addition to this, FEMA also surveyed an additional 3000 people in six oversample groups of roughly 500 each, sorted according to their place of residence and therefore their likely "hazard profile": tornado, flood, hurricane, wildfire, earthquake, or nuclear event. The number of surveyed island residents was 181, of which 29 were from Hawaii, 34 from Guam, 106 from Puerto Rico, and 12 from the US Virgin Islands. Further information about the data can be found in this chapter's Appendix.

[132] FEMA released results from its 2017 survey in September 2019 and its 2018 survey data in January 2020. This chapter relies on the latest 2018 survey.
[133] While the FEMA conducted telephonic interviews with individuals, many questions were in regards to the overall household's level of readiness. Therefore, I often interchange the term "individual" with "household."
[134] As a reminder, the 2017 NHS did not include all island territories, so I use only the 2018 reported raw data.

B. The Dependent Variables

My outcome of interest is preparedness levels in US residents. Individual preparedness is a component of resiliency. Individuals, communities, and nations with higher resiliency have a higher tolerance to resist disasters of a larger scale and "bounce back" after a disaster occurs. This resilience is demonstrated in action by lower casualties and economic costs.

As indicated earlier in the preparedness segment, a common way to measure this outcome is to query households on the presence or absence of a three-day emergency kit, typically by asking if they possess one or not, and what components are in it (e.g., food, water, batteries). For example, the FEMA survey asks, "Do you have enough supplies set aside in your home to get you through three days or more without power or running water and without transportation?" The answer is a dichotomous yes or no and is one of my dependent variables (code = *threedays2*). Nearly 1100 people answered "no" to this screening question, and only those who answered yes were asked the follow-up question of: "How many days do you think you could last in your home without power, running water, or transportation?"

This second question's answer is my main dependent variable; the total number of days given (code = *daystotal2*). However, there are two points to note. First, those who answered "no" to the three-day screening question could have had zero, one, or two days of survivability. In order not to lose these 1100 responses entirely, I assume that, on average, members in this group could last at least one day at home without power, water, or transportation and therefore code them all at one day of survival.[135]

[135] While there may be some individuals who truly could not last one day at home without power, I assume that populace is outweighed by those who could last two days. Thus, if anything, my assumption underestimates total days of survival.

The second issue is on the upper bound; FEMA capped any response of 97 days or greater at 97. Therefore, there could have been respondents who stated they were prepared for 120 days, 180 days, 365 days, or several years. But all would be coded as 97 days. The overall impact of this coding restriction should be very small since, of those who provided an answer (n = 3713), only a minuscule number of respondents (n = 48) indicated a *daystotal2* response of 97 or greater days. Thus, in summation, the *daystotal2* variable has a range of 1-97.

C. Analysis

Testing Hypothesis 1 (Equal preparedness levels) and 2 (Islanders at lower levels of preparedness)

I start with my main outcome of interest: *daystotal2*. For coding, I use the shorthand term *CONUS* to represent the continental states of the US, including Alaska. The variable *Four_island* encompasses the island state of Hawaii, Puerto Rico, Guam, and the US Virgin Islands collection. Hypothesis 1 predicts that there is no difference in preparedness rates between *CONUS* and *Four_island*. Hypothesis 2 expects islanders to prepare less than their mainlander counterparts based upon the SIDS inferences if there is a difference. The density of responses is shown in Figures 5 and 6. Interestingly, even after they answered "yes" to the three-day screening question, many of the respondents still gave responses of only one or two days for the follow-up total days query.[136]

[136] Perhaps having the three-day emergency kit was not enough for these individuals to be convinced they could survive without rapid emergency response?

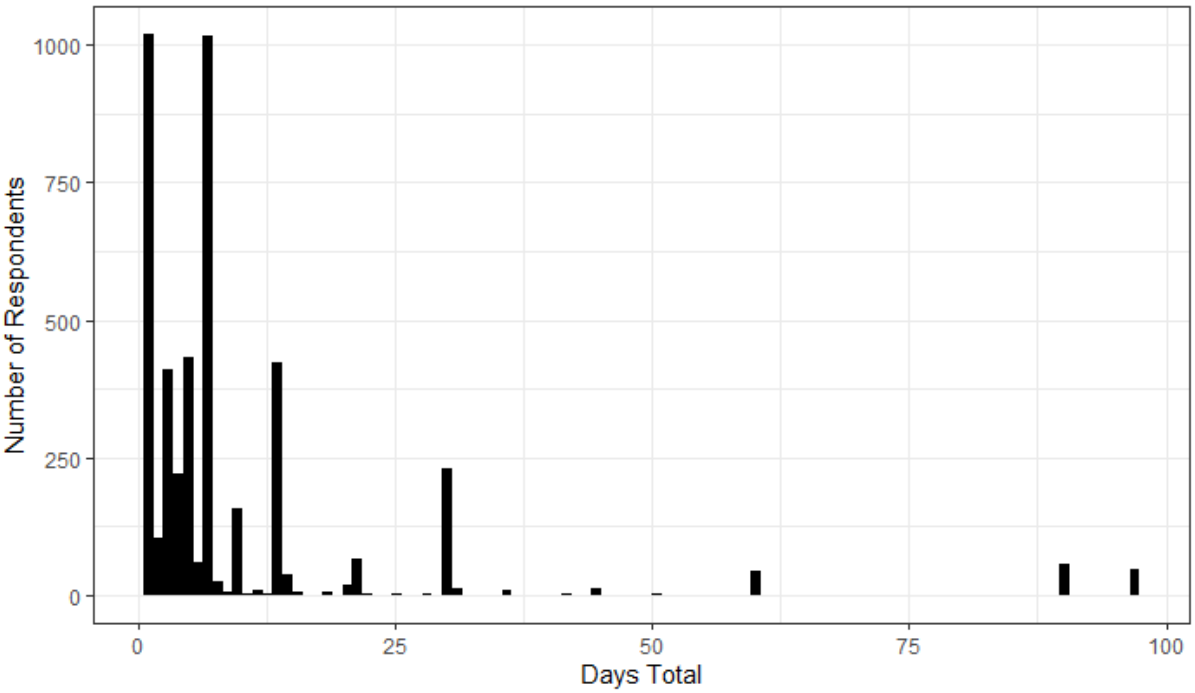

Figure 5: The range of individual home preparedness levels in continental US states[137]

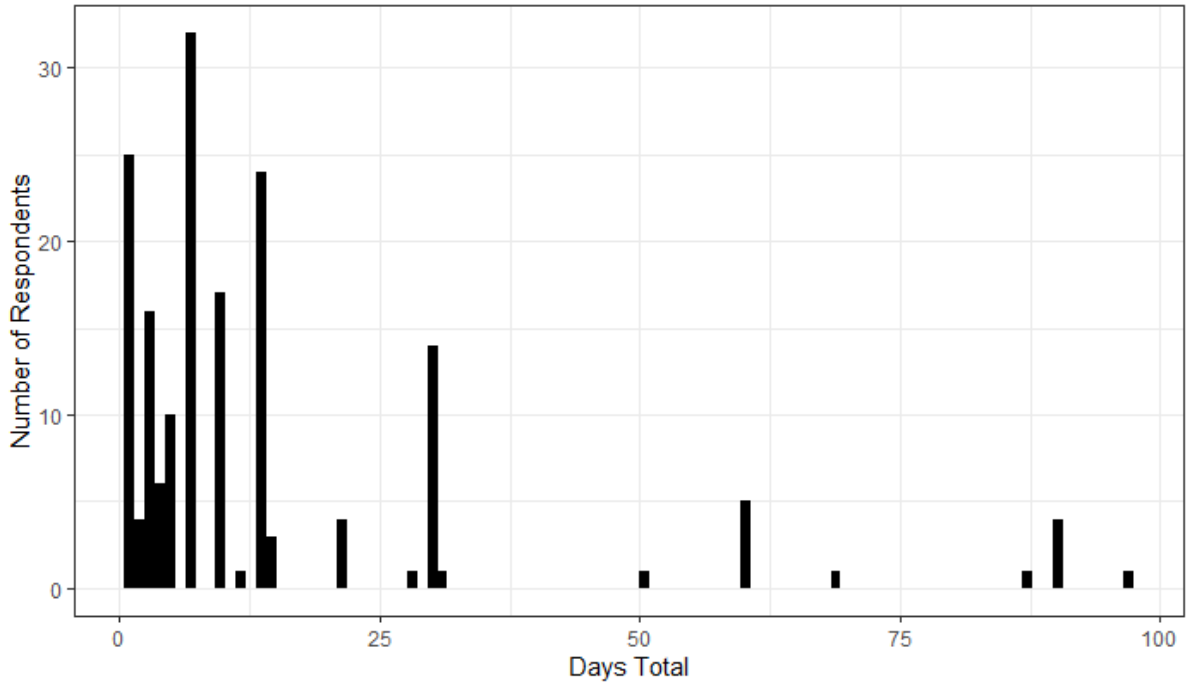

Figure 6: The range of individual home preparedness levels in US islands and territories

[137] Due to the scale, several low count days (less than five responses) do not appear in this figure.

An overall look at Figures 5 and 6 shows several things. First, the distribution is not normal for either, each has a heavy positive skew. Second, it appears some individuals may be engaging in a temporal heuristic of disaster planning. There are spikes at 7, 14, 30, 60, and 90 days in both graphs. While this could be due to mental rounding on the respondent's part, it may also reflect that people may plan for disaster using common calendar references (i.e., one month as an achieved goal). Another reason for these spikes could be because of how disaster goods are sold. Certain big box stores such as Sam's Club, Costco and several online disaster supply websites sell based on calendar breakdowns of weeks and months, not five or ten-day increments.[138] There is also a spike at 97 days as was expected from FEMA's cap at that amount. While there seems to be a greater proportion of individuals in islands with *daystotal2* numbers at 30 days or more, it is hard to tell based on the sizable count difference between the two. To account for this, I log results and then place them in a side-by-side boxplot as depicted in Figure 7.

[138] See for example https://www.costco.com/emergency-kits-supplies.html, https://beprepared.com/, https://www.samsclub.com/b/emergency-food-storage-kits/1760103, https://beprepared.com/, or https://mypatriotsupply.com/collections/emergency-survival-food.

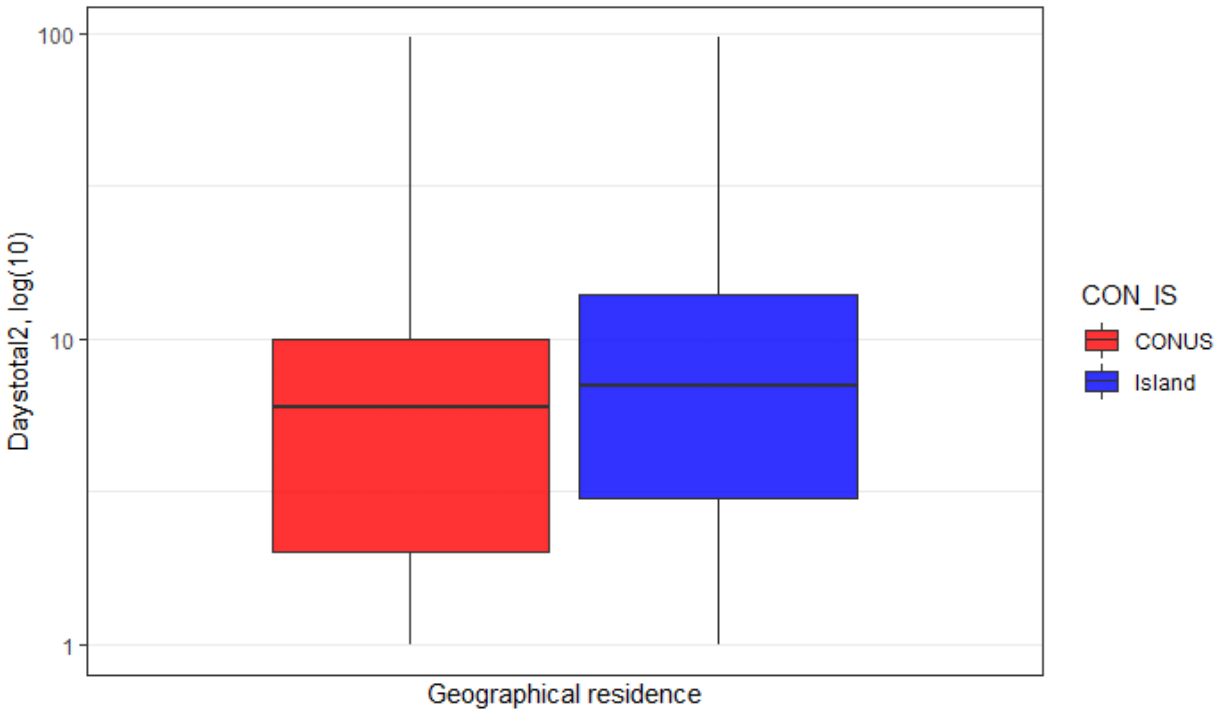

Figure 7: Comparing days of preparedness, *CONUS* vs. *Four_island*

Additionally, I calculate the means and medians of both groups. Island residents reported a median of seven and mean of 14.4 days as compared to mainland residents' response median of seven and mean of 10.0 days (a difference of 4.4 days). The results are displayed in Table 1.

	Min.	1st Quartile	Median	Mean	3rd Quartile	Max	NA's
Islands	1.0	3.0	7.0	14.4	14.0	97.0	10
CONUS	1.0	2.0	6.0	10.0	10.0	97.0	249

Table 1: Tabulated comparison of *daystotal* summary statistics, *CONUS* vs. *Four_island*

Because the distributions are not normal and because they are independent, I utilize for a statistical significance test the Mann-Whitney U test (Wilcoxon Rank Sum Test).[139] The

[139] For further logic on why this test was chosen, see http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/BS704_Nonparametric/BS704_Nonparametric4.html#headingtaglink_1, https://blog.minitab.com/blog/adventures-in-statistics-2/choosing-between-a-nonparametric-test-and-a-parametric-test, or http://www.sthda.com/english/wiki/unpaired-two-samples-wilcoxon-test-in-r.

difference in *daystotal2* means between *CONUS* and *Four_island* is statistically significant at the $p < .001$ level. Stated differently, the mean islander is prepared to last over 40% longer than a mainlander.

Looking at all of the states and territories together reveals that it is not just one island pulling the others' aggregate numbers up. This was a concern since Puerto Rico was fresh from its Hurricane Maria experience the year before the survey and made up 59% of all island respondents. Figure 8 shows the *daystotal2* means of all 54 states, territories and the District of Columbia. As is revealed, all islands are clearly on the upper half of the graph. There are several pertinent points of interest from Figure 8 alone. First, distance from the US mainland does not appear to be related to days of preparedness. Puerto Rico is the closest, then the Virgin Islands, then Hawaii, then Guam, yet Puerto Rico has a higher total day count than Hawaii. Island size – or potentially status – may be a factor, though. Hawaii is the largest at over 6,000 square miles (sq.mi.) within its archipelago. It is also a full state. The three territories, by contrast, have higher preparedness rates than Hawaii and are clustered together. Puerto Rico has a landmass of roughly 3,500 square miles, but Guam is just 210 sq. mi. and the Virgin Islands are the smallest in total at 134 sq mi. with Saint Croix at just 84 sq. mi.

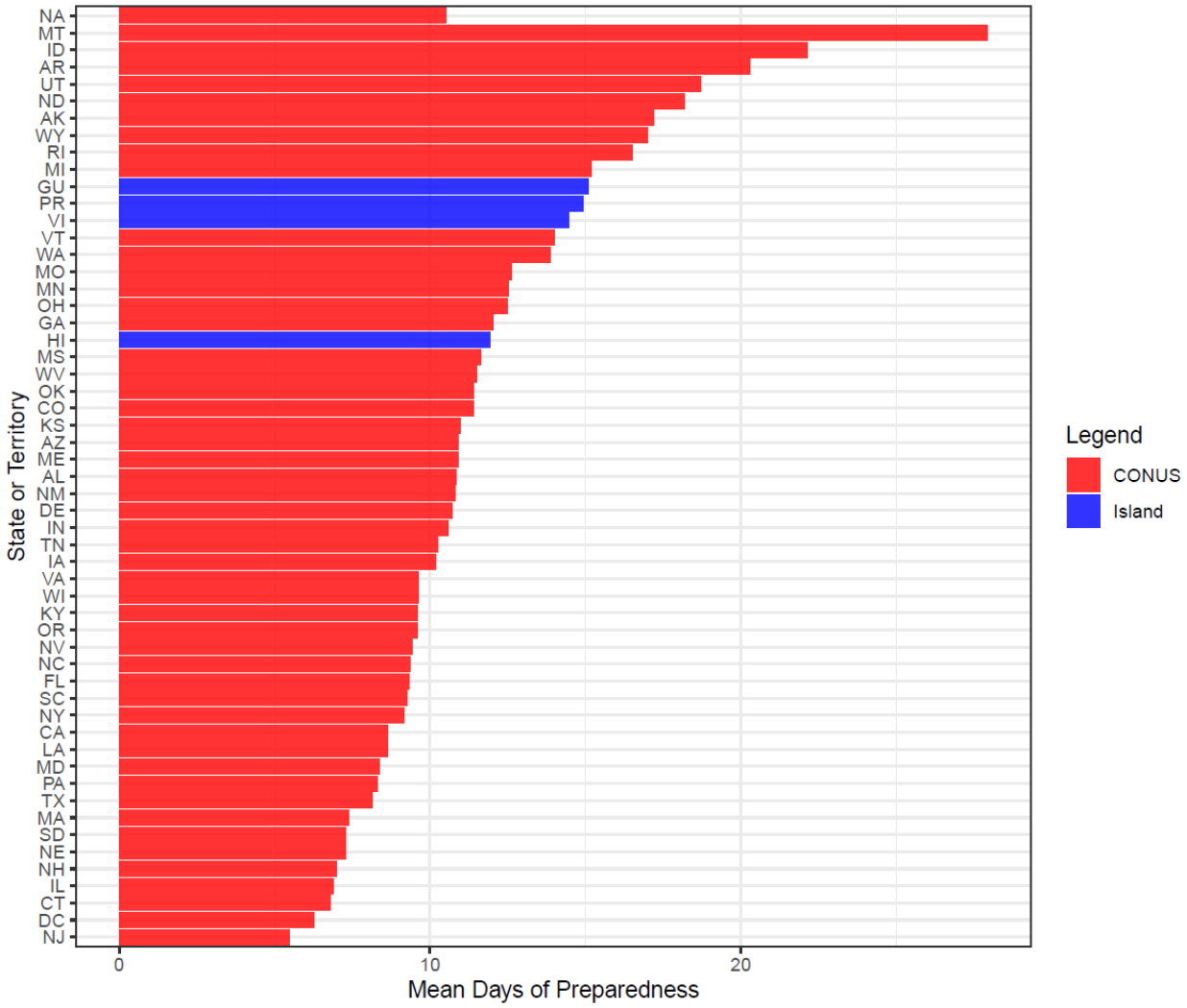

Figure 8: All 54 surveyed US states and territories, Mean Days of Preparedness

But what about the lower threshold query of a three-days worth of supplies, my first dependent variable? The data reveals that 79% of mainland residents and 86% of island residents reported meeting the three-day threshold. This difference is statistically significant ($p < .05$). Therefore, looking at either *daystotal2* or the three-day results, islanders, in either case, possess higher rates of preparation as measured by these metrics. This is unexpected based upon the earlier reviewed literature from FEMA guidance and the SIDS data points where the

expectation was for islanders to be either equal or less prepared. Therefore, Hypothesis 1 is rejected, and so is Hypothesis 2. CONUS respondents have lower preparedness, *ceteris paribus*.

Testing Hypothesis 3a (The FEMA Influencer Model (FIM))

As outlined previously, FEMA's 2018 Executive Summary has five variables spread over four categories or "influencers." Each of the variables matches directly with their survey questions (see the footnote for exact wordings).[140] 1) Awareness of Information regards hearing in the past six months about how to prepare. Answers are a dummy yes or no variable.[141] (code = *heard2*). 2) Experience with Disasters is also a yes or no question. There is no six-month timeframe associated, though; it is chronologically open (code = *expdis2*). Both this and the previous variable are coded with yes being the higher number so that a positive coefficient indicates a positive relationship with the dependent variable. 3) The influencer category of Preparedness Efficacy has two variables; one is a belief that "preparing can help in a disaster" (code = *stepshelp*) and the second is a confidence "in their abilities to prepare" (code = *confident2*). Both are ordinal variables with a Likert scale of one to five. 4) The last variable, Risk Perception, requires a bit more explanation. The question asks about which disaster

[140] **Awareness of Information:** "In the past six months, have you read, seen, or heard any information about how to get better prepared for a disaster? By disaster, I mean events that could threaten lives, disrupt public or emergency services like water and power, or damage property."
Experience with Disasters: "Have you or your family ever experienced the impacts of a disaster?"
Preparedness Efficacy. 1) **Preparedness steps help**: "How much would taking steps to prepare, such as creating a household emergency plan, developing an evacuation and shelter plan, signing up for alerts and warning systems, or stocking up on supplies help you get through a disaster in your area?"
2) Confident: "How confident are you that you can take the steps to prepare for a disaster in your area?"
Risk Perception: All areas of the country are subject to different types of disasters. Will you please name the types of disasters that would have the biggest impact where you live?
[141] As stated earlier, responses such as "don't know" and "refused" are treated as NA. This applies to all of the variables I indicate as coded.

"would have the biggest impact" where the respondent lives.[142] 95% of respondents indicated at least one disaster. Crucially though, this question is one of *severity*. This is not to be confused with likelihood, which is the chance of occurrence. For comparison, the oversample groups had questions regarding the *likelihood* of a specified disaster – as chosen by FEMA's hazard profile – manifesting sometime in the future. For example, in the 500-person oversample group for flooding, 308 people (62%) indicated it would be *unlikely* for a flood to happen in the area they live in. I return to this issue in section four of this chapter. For now, I keep FEMA's model, which measures perception of potential severity, not the perception of potential likelihood.[143] This variable is coded as a dummy (code = *risk1*), with zero being a response of "none" and one equaling a response of any type of disaster.[144]

Results are shown in Table 2. So how does FEMA's model perform? Data interpretation is straightforward; each coefficient is equal to the predicted increase or decrease in the number of days total a respondent believes they "could last in [their] home without power, running water, or transportation." As before, I break out *CONUS* and *Four_island* since the FIM does not take into account geography. If these two separate regions are equivalent, then we should expect the results to be roughly equivalent. This is not the case.

[142] Respondents were allowed to give any answer they wanted. 18 specific disasters were coded, plus "other, all, none, don't know, and refused." Respondents were also allowed to choose up to three answers, but I only recorded the first from each. In FEMA's 2018 Executive Summary, they state 98% of respondents "acknowledge that the occurrence of at least one disaster type could impact where they live" but this is not technically true. Direct correspondence between the author and FEMA indicate they took the ~2% who answered "none" and treated all others as a positive. I correct for this in my coding and analysis.

[143] Interestingly, FEMA did not include Risk Perception as a key influencer variable in its 2017 NHS Executive Summary. It is new for 2018.

[144] If respondents answered "none" they were then prompted by the interviewer to choose something from the FEMA disaster list (e.g. toxic chemical spill, flood, etc.). None was the coding if the interviewee still selected no disaster.

	Dependent variable: daystotal2		
	(1) CONUS	**(2) Four_Island**	**(3) Island Dummy**
Islandyn			**3.611****
			(-1.277)
risk1	1.794	13.356	2.401
	(-2.09)	(-9.925)	(-2.041)
heard2	**0.982**$^{+}$	7.137	**1.062***
	(-0.503)	(-4.568)	(-0.502)
expdis2	**1.798*****	3.048	**1.797*****
	(-0.501)	(-3.892)	(-0.499)
stepshelp	**-1.232*****	-2.526	**-1.255*****
	(-0.213)	(-1.585)	(-0.212)
confident2	**2.889*****	**3.610***	**2.892*****
	(-0.24)	(-1.744)	(-0.239)
Constant	-2.483	-21.413	**-6.732***
	(-2.357)	(-16.338)	(-2.623)
Observations	4,161	165	4,326
R^2	0.051	0.053	0.052
Adjusted R^2	0.05	0.023	0.051
Residual Std. Error	15.678 (df = 4155)	19.188 (df = 159)	15.821 (df = 4319)
F Statistic	44.534*** (df = 5; 4155)	1.770 (df = 5; 159)	39.757*** (df = 6; 4319)
Note:			$^{+}$p < .1, *p < .05, **p < .01, ***p < 0.001

Table 2: FIM and total days of preparedness

For Model 1 (*CONUS*), risk is positive but not significant. Awareness (*heard2*) is positive and slightly significant (p <.1). The rest of the variables for Model 1 are also statistically significant, and the one with highest impact is *confident2*. Recall that this is a Likert scale variable, so every one-step increase predicts a rise of nearly three days of survival. According to the FIM predictions, if FEMA could raise individual confidence by just a single step, that alone would be the equivalent increase of the basic FEMA recommended three-day threshold.

Stepshelp is, against FEMA predictions, negative (and even more so in Model 2). Interpretation for this result is a bit difficult due to the wording of the question. This question had five subcomponent parts so I do not know if mainland and island residents anchored more on one part or another. Perhaps when people living in CONUS are prompted not just to think about supplies but also warnings and evacuation, they feel less likely to have multiple days of disaster provisions on hand since they might be able to drive away given advanced notice?[145]

For Model 2 (*Four_Island*), the risk variable is also not significant, but the coefficient is much larger than in Model 1. My assessment of this finding is twofold. First, the risk question is open-ended, so people are free to think of any disaster that comes to mind. Some of those listed were wildfires, blizzards, a toxic chemical spill, power outages, earthquakes, a terrorist attack, or a meteorite striking the earth. Among all 5003 respondents, two people even said a zombie apocalypse, and yet ironically, not one person stated a pandemic. Each of these disasters has radically different levels of severity and recovery timeframes, so that may explain why this independent variable did not reach statistical significance. Second, island residents face disasters that can be existential in nature, which could explain why their coefficient was so much higher. I expound on this finding in section four.

For Model 2, only confidence was statistically significant. This is potentially due to the smaller number of valid responses for this group (n = 141). Intriguingly, the absolute value for

[145] There were two questions from the FEMA survey that also queried on evacuation. The results indicate islanders are slightly more likely to have an evacuation plan and have emergency supplies packed and ready to grab immediately if needed. This further supports my claim that islanders think about disasters more than mainland residents.

every coefficient in Model 2 is larger than that in Model 1. Something is driving higher change, but for now what that is remains unclear.

Model 3 supports this conjecture. It includes the dummy variable (*code = Islandyn*) of whether or not someone resides in one of the four island groups. The positive covariate for this variable becomes the most impactful of all and indicates island residents believe they can last 3.6 days more than CONUS residents, *ceteris paribus*.

Looking holistically, the FEMA Influencer Model performs well, at least with the larger datasets. Adding an island dummy improves but does not repudiate FEMA's beliefs on what effects disaster preparedness. Only the *stepshelp* variable is anomalous. This supports Hypothesis 3A with *daystotal2* as the dependent variable. The entire FEMA data set's coefficient plot is shown in Figure 9 with the Island dummy added to the FIM.

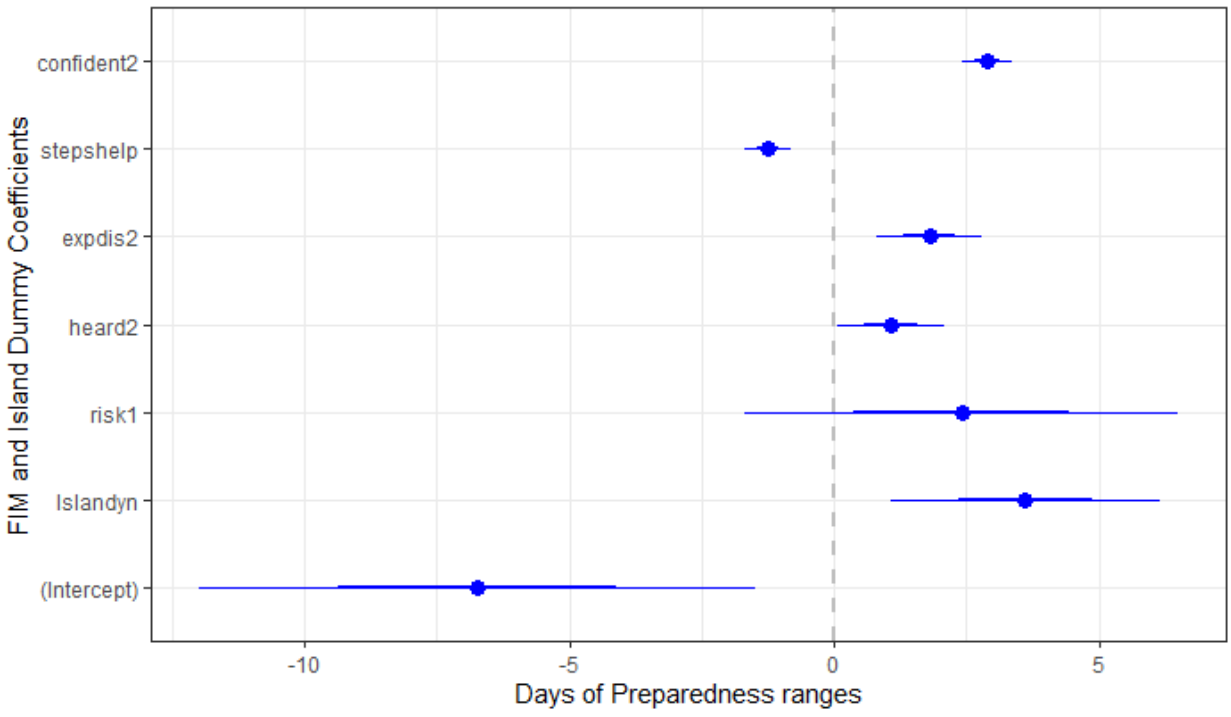

Figure 9: Coefficient Plot of the FEMA Influencer Model against the full dataset

Notice the wide dispersion of risk perception, especially in comparison to the other explanatory variables. As a reminder, individuals were asked to list *any* disaster they thought would be most impactful to where they lived. I correct for this in section four.

I switch now to the second dependent variable. FEMA's focus is not on increasing American levels of preparedness to 90 days, or even 30 or 14 days. Rather, it is on attaining the basic three-day emergency kit. Recall that FEMA described its "key influencers" as variables that would predict if an individual would "begin preparing for a future hazard," not how in-depth their preparedness would go. At this lower threshold, then, as shown above, islanders are statistically more likely to prepare at the three-day level than CONUS members (86% to 79%, respectively). Does the FIM predict this? Table 3 reveals the data.

Rerunning the regression analysis with three-days as the dependent variable (code = *threedays2*) yields results similar to the *daystotal2* regression. The *threedays2* dependent variable is dichotomous (1 = no, 2 = yes), so interpretation of the results shows predicted percent changes, not an increase in days (i.e., a coefficient of 0.07 indicates a 7% positive rise towards having a three-days of emergency supplies). What immediately jumps out from Table 3 is that *risk1* is .601 for islanders in Model 5, an amount 11 times as large as the equivalent coefficient in Model 4. This indicates that 60% of the dependent variable (having a three-day emergency kit) is explained by an islander simply believing there would be a disaster impacting where they lived as compared to an islander that thought no disaster would befall them.

No other explanatory variable comes even close across regression analysis of Models 4, 5, and 6. With this dependent variable, in Model 6 the Island dummy is not statistically significant, and comparatively with other variables in Models 4-6, is relatively low in impact.

However, introducing it does drastically mute the risk variable seen in Model 5, a finding that would have remained hidden if islanders were not broken out into their own separate category.

	Dependent variable: threedays2		
	(4) CONUS	**(5) Four_island**	**(6) Island Dummy**
Islandyn			0.036
			(0.031)
risk1	0.054	**0.601*****	**0.090**$^{+}$
	(0.052)	(0.173)	(0.050)
heard2	**0.087*****	0.006	**0.085*****
	(0.012)	(0.077)	(0.012)
expdis2	0.006	-0.03	0.005
	(0.012)	(0.066)	(0.012)
stepshelp	**-0.012***	-0.002	**-0.011***
	(0.005)	(0.027)	(0.005)
confident2	**0.074*****	**0.058**$^{+}$	**0.074*****
	(0.006)	(0.03)	(0.006)
Constant	**1.351*****	**1.096*****	**1.284*****
	(0.058)	(0.278)	(0.064)
Observations	4,286	172	4,458
R^2	0.059	0.097	0.059
Adjusted R^2	0.058	0.069	0.058
Residual Std. Error	0.391 (df = 4280)	0.335 (df = 166)	0.389 (df = 4451)
F Statistic	53.378*** (df = 5; 4280)	3.550*** (df = 5; 166)	46.376*** (df = 6; 4451)
Note:			$^{+}$p < .1, *p < .05, **p < .01, ***p < 0.001

Table 3: FIM and a three-day emergency kit

My interpretation of this surprising finding is that when islanders think of a "big" impact disaster, they conjure up something that is larger – potentially even existential in nature – which, given the data on severity from section two, is a logical deduction. Risk perception consequently is playing a radically different role in the minds of island residents. I tease out a bit more of this finding in section four, below.

Another unexpected finding is that personal experience with disaster is neither significant nor substantial in any of the three models in Table 3. This is strange compared to those two explanatory variables' impacts against the longer scale *daystotal2* outcome of interest. What could account for this? There are a few options. First, what may be at play is a threshold effect (Pierson, 2003). Pierson describes mental heuristics over certain time horizons of cause and outcome. He explains that some things build over time without a discernable change in the dependent variable, but then a triggering event, or threshold, occurs and much like an avalanche, the system then changes rapidly. Since the total days of preparedness was only asked of those who already acknowledged having a three-day emergency kit, perhaps that could be akin to the threshold requirement? For islanders, the fear of future catastrophe, once triggered, drives increased preparedness levels and allows additional influences (e.g., past experience, confidence in ability) to manifest. This relates to a second possibility, one found in the prepper literature. Mills discovered in his ethnographic work with preppers that it was not *their* personal experience with a disaster that motivated them to start prepping, but rather seeing media reports of the impact of large disasters on *others* (Mills, 2019b). Huddleston found something similar, the desire by preppers to prepare for potentialities (Huddleston, 2016). As a final possibility, it may be that mainland residents have an escape option mostly unavailable to their geographically isolated peers, which drives down the severity fear of future events. Mainlanders might need less self-sufficiency due to geography.

In conclusion, Hypothesis 3a finds modest support with *threedays2* as the outcome of interest and improves when adding the Island covariate. These findings seem initially

dependable as the FEMA Influencer Model is predicated on what motivates individuals to *begin* preparing for disaster. I now turn to the M-K model.

Testing Hypothesis 3b

Clearly, since FEMA created the dataset, there would be direct corollaries between their questions and their causal claims. However, the M-K model is an outside explanation; therefore, I have to substitute proxy questions that do not directly align to the questions asked. This makes findings more exploratory rather than definitive. Also, the M-K model is why people do not prepare, but I am using its inverse to see if that predicts higher preparedness levels. This is not entirely out of line with what Meyer and Kunreuther attempted in their book qualitatively, so I feel confident shifting this to quantitative analysis.[146] Again, their six biases are myopia, amnesia, optimism, inertia, simplification, and herding.

To measure myopia, I use the variable "stage of preparedness" since it indicates what thoughts or steps a person has taken and when they took them (code = *stageprep*). This indicates not just movement but also time horizons of when that movement was taken or not taken. It is a five-step ordinal variable. For amnesia, I will utilize if the person has ever experienced a disaster (code = *expdis2*), just like in FEMA's model. For optimism, since this is a measure of likelihood or severity, a variable that combined both would have been the best proxy. Unfortunately, when FEMA queried for likelihood, it was done only in the oversample populations and only for the specific disaster (e.g., wildfires) that FEMA was interested in

[146] The authors listed a "Behavioral Risk Audit" which took each bias and suggested a counteraction to overcome that bias. The variables remained the same (Meyer & Kunreuther, 2017).

studying American feedback for in those areas. So, here I use the same risk perception variable as in the FIM (code = *risk1*), and with all the same caveats. For inertia, I will use the responses from the 2018 FEMA survey on money earmarked for emergencies" (code = *moneyemer*).[147] This is different than income and has a yes or no response (coded no = 1, yes = 2). Specifically setting aside funds takes planning and action. Although, respondents may think of this as money not just for disaster but also for any financial setback. This seems to be in the spirit of how M-K thinks about inertia – doing something and calling it good enough – but I take caution interpreting results. I do not have a great variable for simplification since no FEMA question discusses partial steps except for the stage of preparedness, which I am already measuring. However, one of the easiest things people can do regarding a disaster is at least discuss it. So, as a minimum threshold, I use this (code = *discuss2*). Herding is another troubling variable for which to find a good proxy. Of course, since I am parsing out individuals based on geographical location, that might be a very broad proxy as they are surrounded by others of their same geographical type (CONUS or island). Therefore, I treat this the same as the island dummy variable (code = *Islandyn*)

Table 4 shows the regression results for total days. Compared to the FEMA model, the M-K model performs a bit worse. The data generally yields the same overall conclusions but

[147] As in the previous section, exact wording of questions is listed here:
Money for emergency: "Do you have money set aside for emergency?"
Stage of Preparedness: "Thinking about preparing yourself for a disaster, have you developed and discussed an action plan with your family, that includes information about how to leave your community or where to shelter, and have set aside supplies such as, food, water, and other essentials that allow you to be self-sufficient for at least three days?"
Discuss: "Has your household developed and discussed an emergency plan that includes instructions for household members about where to go and what to do in the event of a local disaster?"

with differences in some specifics. Just like the FIM for total days, none of the three models in Table 4 yield statistical significance for risk, and signs in Models 7 and 9 are actually negative.

	Dependent variable: daystotal2		
	(7) CONUS	**(8) Four_island**	**(9) Island Dummy**
Islandyn			**2.395**$^{+}$
			(1.238)
risk1	-1.506	7.350	-0.926
	(2.025)	(9.777)	(1.979)
moneyemer	**1.959*****	1.886	**1.960*****
	(0.537)	(3.225)	(0.531)
expdis2	0.631	1.914	0.635
	(0.490)	(3.858)	(0.488)
stageprep	**2.911*****	**4.728****	**2.946*****
	(0.200)	(1.593)	(0.199)
discuss2	**1.296***	0.695	**1.304***
	(0.533)	(3.560)	(0.528)
Constant	**-5.067***	-19.875	**-8.177****
	(2.228)	(12.862)	(2.515)
Observations	4,147	163	4,310
R^2	0.087	0.084	0.088
Adjusted R^2	0.086	0.055	0.087
Residual Std. Error	15.213 (df = 4141)	18.975 (df = 157)	15.365 (df = 4303)
F Statistic	79.088*** (df = 5; 4141)	2.884** (df = 5; 157)	69.532*** (df = 6; 4303)
Note:			$^{+}$p < .1, *p < .05, **p < .01, ***p < 0.001

Table 4: M-K Model and total days of preparedness

The effect of experience with disaster is smaller in the M-K regressions, and none achieve statistical significance, unlike in the FIM. Stage of preparedness seems to have a comparable impact as confidence in the FIM model. Likewise, the discussion variable appears to play a related role as the hearing variable did for the FIM, at least when looking at CONUS (Models 1 and 7) and Island Dummy (Models 3 and 9) results. Overall, adding the Island dummy appears to strengthen the overall M-K model.

As with the FIM, I also compare the M-K model to the lower three-days threshold. Table 5 showcases the regression against the same three datasets. Again, the greatest takeaway is the predicted effect of risk. In the M-K model, 54% of a yes answer for islanders having a three-day emergency kit is explained by believing a future disaster with personal impact could transpire. But, against the CONUS dataset or with the added Island dummy variable, the significance disappears as does effect. Having emergency funds yields approximately a 12% jump in having a kit for Models 10 and 12 and being at a higher stage of preparedness increases the chance of having a three-day kit by roughly 10% for all three groups.

	Dependent variable: threedays2		
	(10) CONUS	**(11) Four_island**	**(12) Island Dummy**
Islandyn			0.023
			(0.029)
risk1	-0.013	**0.540****	0.019
	(0.049)	(0.169)	(0.047)
moneyemer	**0.127*****	0.069	**0.125*****
	(0.013)	(0.055)	(0.013)
expdis2	**-0.026***	-0.004	**-0.026***
	(0.012)	(0.065)	(0.012)
stageprep	**0.097*****	**0.107*****	**0.097*****
	(0.005)	(0.026)	(0.005)
discuss2	0.014	-0.029	0.013
	(0.013)	(0.060)	(0.013)
Constant	**1.264*****	**0.832*****	**1.213*****
	(0.054)	(0.222)	(0.060)
Observations	4,280	169	4,449
R^2	0.153	0.178	0.153
Adjusted R^2	0.152	0.153	0.152
Residual Std. Error	0.372 (df = 4274)	0.328 (df = 163)	0.370 (df = 4442)
F Statistic	154.808*** (df = 5;	7.051*** (df = 5; 163)	133.800*** (df = 6;
Note:			$^{+}$p < .1, *p < .05, **p < .01, ***p < 0.001

Table 5: M-K model and a three-day emergency kit

Unfortunately, it appears the M-K model may have the same problem as the FIM when it comes to the statistical significance of the majority of the island findings, both for the total days and three-day outcome of interest. While it might be due simply to bad proxy substitution, I reject Hypothesis 3b with the M-K model based upon its lower performance as compared to the FIM across comparable regression sets. The M-K model may be best utilized for this chapter's purposes then is serving more as a robustness check for portions of the FIM and adding a bit of color to dimensions of disaster preparedness such as the squirreling away of funds.

To conclude this section, there are two main takeaway points. The first is that being an island resident has some impact on disaster preparedness, most likely due to perceptions of risk severity. I have proposed as a reason the more existential threat and concomitant state failure of certain disasters as well as the reduced ability to flee. Again, I speculate that people living in the continental US can drive to safety from several disasters, whereas islanders cannot. Vulnerability for many mainlanders can be reduced and resilience increased by the simple action of fleeing out of harm's way rather than stockpiling a large quantity of emergency items. If there is safe haven to retreat to, why not leave? Moreover, since FEMA, state, and sometimes even national leaders often encourage this behavior (e.g., hurricane evacuation mandates), this response is highly plausible. Additionally, if by staying in place, the response efforts can reach you quickly after a disaster, why have more stored than you need? In my penultimate section, I expand analysis on these issues to seek additional clarity.

IV. Towards an improved understanding

One of the challenges listed above is that of parsing out and measuring risk perception. There is hazard variation in destruction potential, early or no warning, and duration of recovery. To control for this, I now focus specifically on just one disaster at a time and, for the purposes of teasing out if state failure may contribute to individual preparedness action, look only at heavily destructive hazards. Again, state failure does not indicate a failed state in the definition I cited earlier. Rather this definition shows that states or sovereigns cannot provide utter immunity to large-scale catastrophes and often in these circumstances provide limited or even non-existent basic services (electricity, clean water, food) in the aftermath. Because of this, via the human security or preparedness angles, individuals might feel the need to mitigate both physical and financial risk at higher levels due to more immense calamities.

This potentiality has been highlighted by multiple traditional disaster scholars (Clarke, 2006; Comfort et al., 2010). The terror attacks of 9/11 and Hurricane Katrina serve as common examples (Tierney, 2019). It also comes from researchers who look at the extremely prepared. Mills finds that many preppers believe the government cannot prevent certain disasters and may even cause some of them, for example, an economic collapse due to profligate spending and debt (Mills, 2019a). And after the fact, government disaster response may be heavily delayed (Mills, 2019b). Therefore, self-sufficiency is a common identified trend among preppers (Lindsay, 2015; Sims & Grigsby, 2019). In certain instances, preppers believe that help might never come (Garrett, 2020; Huddleston, 2016), a concept referred to as YOYO (You're On Your Own). Barker's research confirms this belief among preppers in the United Kingdom, an inability by the state to prevent certain disasters and a lack of faith for timely disaster aid

(Barker, 2019). Therefore, my analysis of the FEMA data could serve as a plausibility probe into their insights. If true, it would be a massive advancement for that field given the dearth of quantitative data in the nascent prepper literature. There could be other factors at play, such as island culture, a perceived greater availability of food, or a permissible weather climate that lessens the need for hardened and modern shelters. I do not rule out other possibilities, but do argue state failure is likely a strongly correlated causal variable.

I test this from two perspectives, and the first is from the point of view of the individual and their perception of what hazard will have the greatest impact on where they live. From the individual's standpoint, then, this is more a question of *severity*. The second is from FEMA's point of view and what their analysis is of probability of risk based upon geographic location. Five of FEMA's six oversample groups were based more upon the *likelihood* of a disaster at various terrestrial locales, with the sixth, a nuclear event, as less a measure of likelihood and more a measure of severity. Some places could be on more than one list. For example, Dallas was included both as part of Texas with the threat of hurricanes as well as an urban area for a possible atomic detonation. This allows me to moderate the issues brought up throughout section three on risk perception and individual action. If fruitful, this should provide insight into state failure and human security issues as they relate to disaster preparedness.

A. Natural Disasters (Hurricanes and Earthquakes)

I start with the individual level. FEMA's questionnaire asked the following question in order to parse out what people thought would be the disaster most detrimental to them personally: "All areas of the country are subject to different types of disasters. Will you please

name the types of disasters that would have the biggest impact where you live?" This question is identical to the one used to derive the explanatory variable *risk1*, but I now code it differently. For the FIM and M-K model, I coded it as a dummy, with zero being a response of "none" and one being a response of *any* type of disaster. Now, I return the coding to its original form. Interviewees were not prompted with a list; the question was open-ended. FEMA had eighteen preset answers for coding (snowstorm, terrorist attack, a landslide, etc.) plus a category each for "all," "don't know," or "refused." They also had one code for "none" and "other."[148] Table 6 shows the results.

	1	2	3	4	5	6
CONUS	Tornado 26%	Earthquake 24%	Hurricane 21%	Floods 9%	Wildfires 8%	Winter storm 4%
Four Island	Hurricane 50%	Earthquake 31%	Floods 9%	Tsunami 3%	Winter storm 2%	Land or mudslide 2%
Core FEMA sample	Tornado 32%	Hurricane 19%	Earthquake 18%	Floods 8%	Wildfires 7%	Winter storm 5%

Table 6: Top six biggest impact risks by group

For CONUS respondents, these match nicely with five of FEMA's top six concerns. The top three events cluster in the 20s, then go to single digits for the last three. Storms replace nuclear events (the latter were less than 1% of people's top biggest disaster) from FEMA's list. Island

[148] Parsing through the "other" category yields synonyms for certain hazards. For example, many respondents indicated a typhoon, but this was coded in the "other" category even though typhoons are the same meteorological phenomenon as hurricanes, yet manifest in the Pacific Ocean rather than the Atlantic. Also, tropical storms or depressions were listed as "other". I was able to manually count several of these and add them to Table 6, but I did not recode the entire "other" category. All data besides Table 6 comes strictly then from FEMA's 19 preset answer responses.

residents show something different. 81% said their top fear was a hurricane or earthquake. This matches well with the SIDS data. All other concerns are much lower. For clarity, I also added a row indicating the core FEMA sample, that is, the 2000 respondents that were not part of the six hazard oversample groups. These match in order almost perfectly with the CONUS concerns and are close in percentages, so I do not provide separate analysis for this group.

Because of the SIDS data, hurricanes are a natural place to begin. From the FEMA survey, I isolated only those citizens who indicated a hurricane as their top concern. Taking just these responses, I created a new subgroup of individuals and then once again split out *CONUS* and *Four_island* residents. Figure 10 shows the side-by-side comparison of these two and their logged days of preparedness levels.

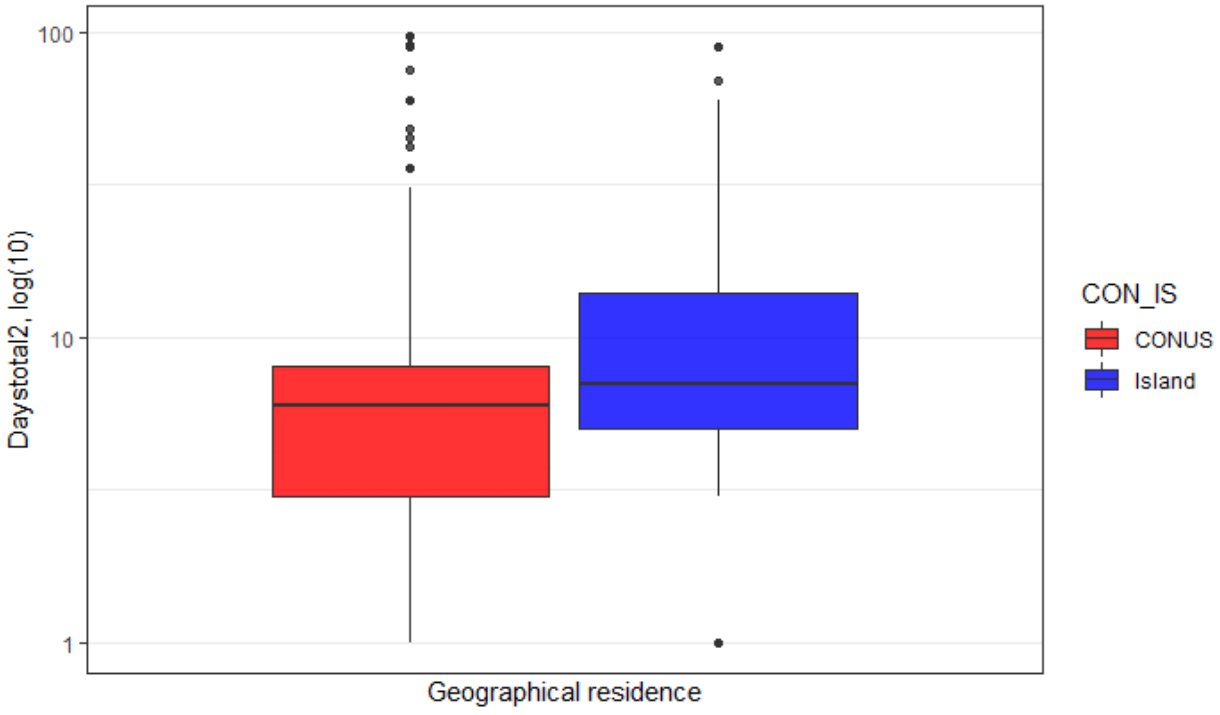

Figure 10: Personal beliefs on hurricane impacts and preparedness, CONUS versus Islands

While the medians are the same as Figure 7, the means are 8.7 for mainlanders and 14.8 days for islanders. This is a larger split (6.1 days or a 70% mean increase CONUS to island) than that of the full sample when testing all FEMA respondents and all hazards earlier (see Table 1 and recall that difference was 4.4 days). Repeating a Mann-Whitney U test for this subgroup indicates statistical significance at the $p < .001$ level.

Why such a large discrepancy? Possibly because hurricanes provide an earlier warning, mainland residents can flee, usually by car. Islanders are severely limited in their capacity to drive away. And, since hurricane pathway forecasts are predictions, not absolutes, mainland residents have the ability to take a wait-and-see approach up until the final hours. In contrast islanders must purchase a comparatively expensive airline ticket, typically days in advance, for a disaster that may pass them altogether. Also, availability is limited both due to the number of flights and the fact that fleeing tourists might be taking up many of the seats. On top of all of this, mainland state governors can order mandatory evacuations. Although their island counterparts can do the same, it is not nearly as feasible. Where would the people go other than a community shelter?

To make comparisons as close as possible, I also isolated the responses of just Floridians.[149] Of the 1057 respondents who indicated hurricane as most impactful, 339 were from Florida. Of those, 260 provided a response to their total days of preparedness. That

[149] Florida is the closest mainland state to an island in terms of hurricane impact (all of Florida is at risk, just like all of an island). Texas, North Carolina, and New York are all at risk from hurricanes, but their geographic dispersion and topographical composition make a hurricane strike far less likely to cause statewide devastation. Conversely several hurricanes have caused large swaths of damage across Florida. One example is Hurricane Andrew.

average was 10.1 days, higher than the mainland response but much lower than that of the average island resident. When looking back at Figure 8, Florida was far below any of the island responses and in the bottom half (16th lowest to be exact) of all states and territories. I find this to be powerful evidence that a greatly reduced ability to evacuate plays a heavy role in risk perception and the need or benefits of having emergency supplies on hand, and to a greater extent, for islanders versus continental citizens.

Flipping to FEMA's point of view supports the same conclusion. FEMA conducted an oversample of 500 residents living in areas FEMA deemed most susceptible to hurricanes. FEMA asked these residents how likely a hurricane was to strike their area. 411 thought it was likely and 66 thought it was unlikely. Splitting out again by geographic residence, the mean days total of preparedness for *CONUS* was 10.7 days and *Four_island* was 14.9, roughly a four-day difference ($p < 0.1$). This result provides a robustness check and supports my contention that islanders, when controlling for the type of disaster either by perception (individual) or by probability (as computed by FEMA), are more likely to prepare for disaster at significantly higher rates than their continental brethren.[150] Figures 11 and 12 depict the state and territory averages. It is evident that islands are on the high ends of preparedness from both metrics.

[150] I ran the regressions with the FIM and the added Islandyn variable and found the latter to be statistically significant and the largest covariate both in the individual severity grouping of data and in the FEMA likelihood grouping.

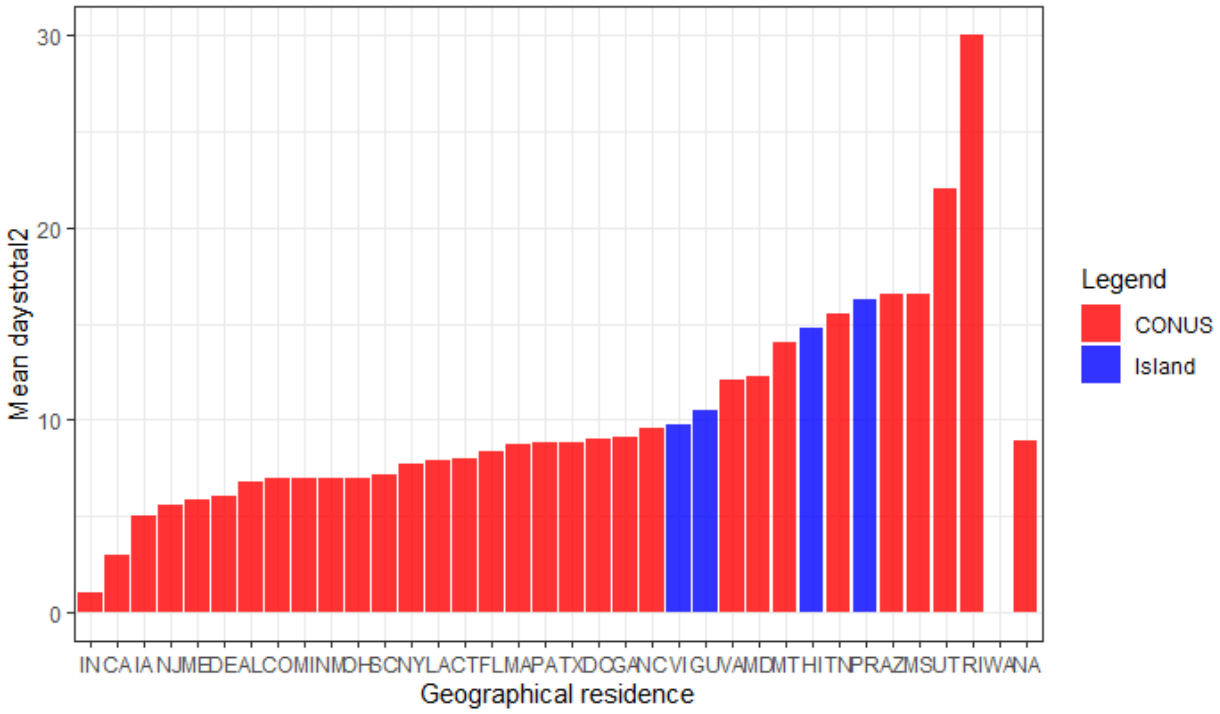

Figure 11: Mean total days of preparedness, Hurricane "biggest impact" respondents only

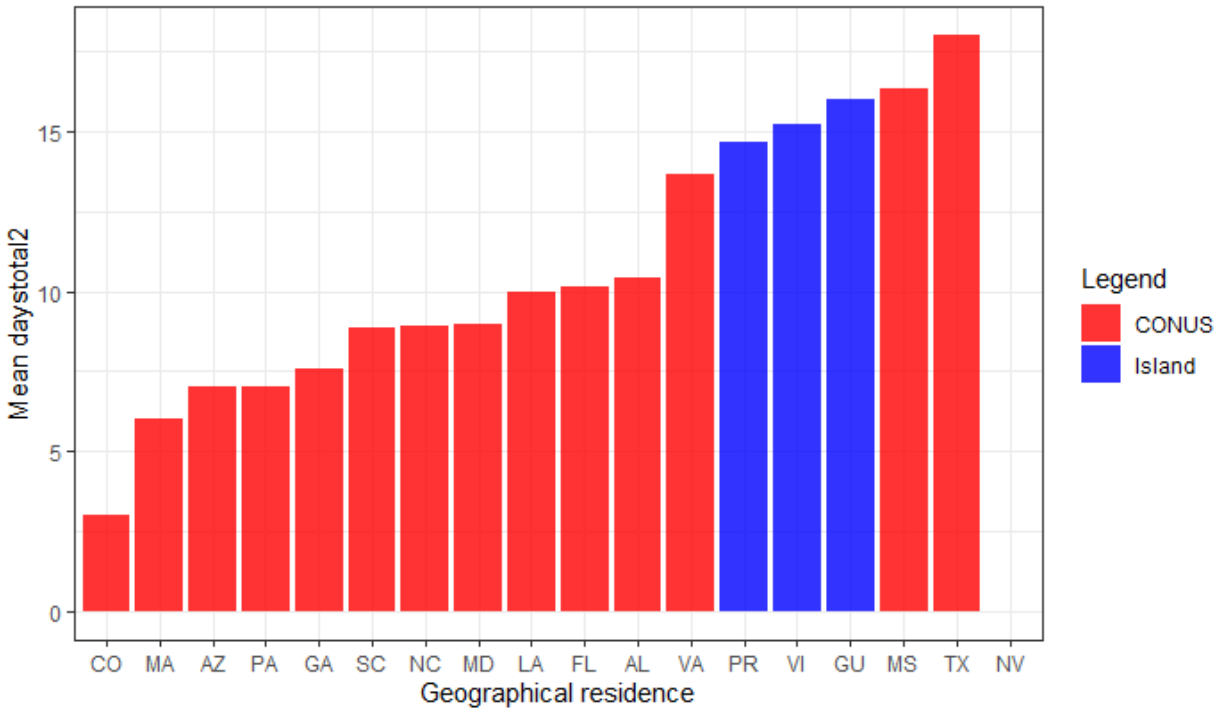

Figure 12: Mean total days of preparedness, Hurricane oversample respondents only

What about earthquakes? Haiti showed the utter desolation on an island state for this type of disaster. Although, a major difference as compared to hurricanes is that earthquakes rarely come with a warning. There is no chance to flee before the event for either island nor mainland residents. Nevertheless, as indicated earlier, response and recovery efforts are easier when the state, sovereign, and volunteer assets can drive to the emergency area.

From the FEMA data, 1124 people believed that earthquakes would be the most impactful disaster to befall their area. The *daystotal2* boxplot in Figure 13 depicts the same pattern we have seen several times now. Island residents had 15.6 days of preparedness and *CONUS* members were 10.1 ($p < .01$). Figure 13 shows the boxplot and Figure 14 indicates the state averages for respondent risk perception. Of note, the results in Figure 14 are not as strong as those seen elsewhere, but earthquakes threaten a far larger swath of America than hurricanes do.

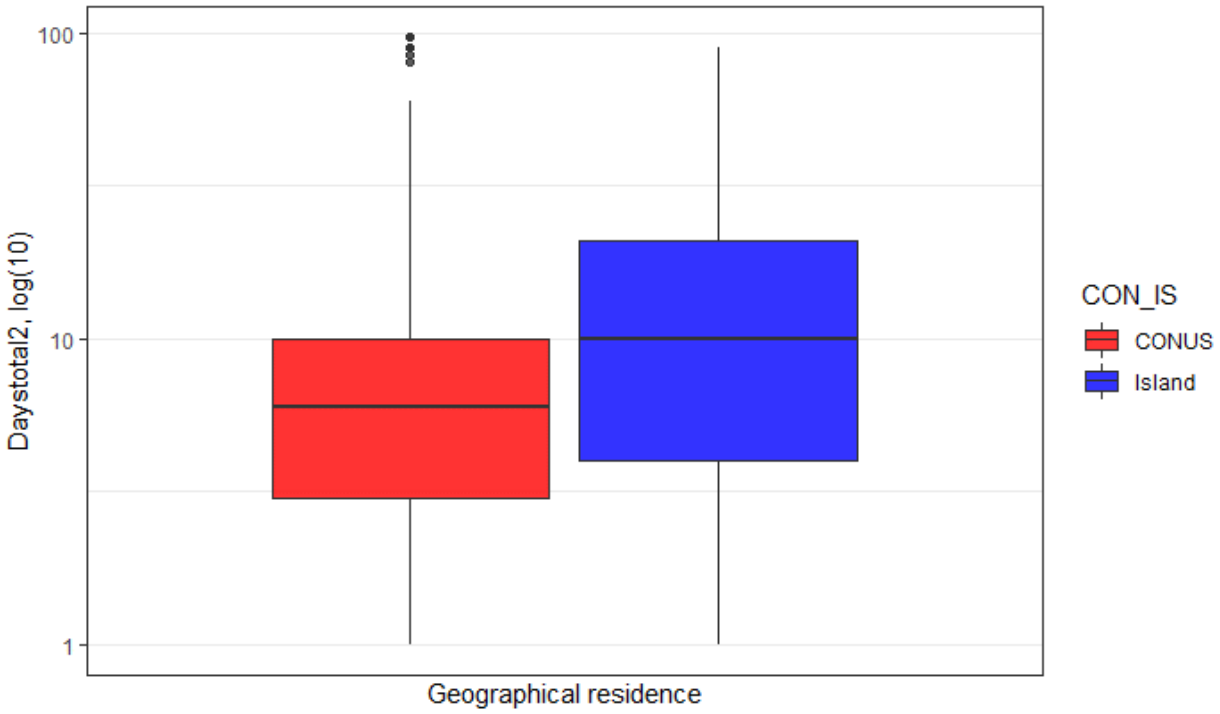

Figure 13: Personal beliefs on earthquake impacts and preparedness, CONUS versus Islands

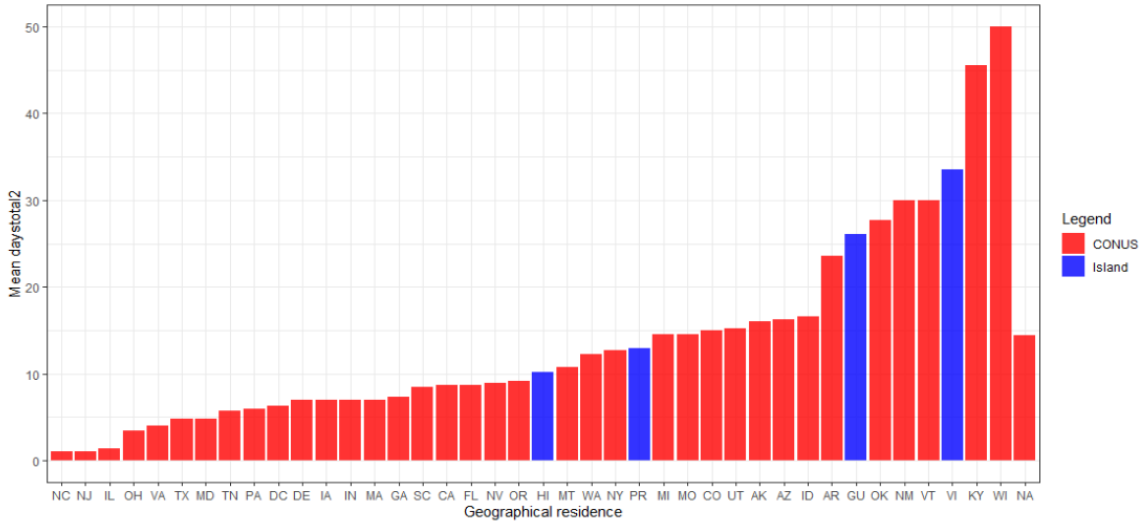

Figure 14: Mean total days of preparedness, Earthquake "biggest impact" respondents only

When moving to FEMA's point of view, their earthquake group did not contain a large number of island residents (only 9 islanders were in this oversample). Therefore, I cannot conduct a robustness check via this method for earthquakes.

Approaching the puzzle of why island residents prepare at higher levels than their mainland counterparts from the viewpoint of risk perception coupled with state failure seems to be on the right track. Whether it is the inability to flee, the destructive nature of certain catastrophes, the lag time in response efforts, or a combination of these items, something is activated in islanders to gather more supplies. I conduct one final inquiry to see if this holds for a catastrophic manmade incident, that of a nuclear event. Since I have not discussed in detail a nuclear threat previously, I give below a small background of a single incident that recently happened to provide salience for the topic.

B. Manmade disaster (Nuclear Event)

On January 13, 2018, all cell phones in Hawaii, including both residents and tourists, received the following alert message: "BALLISTIC MISSILE THREAT INBOUND TO HAWAII. SEEK IMMEDIATE SHELTER. THIS IS NOT A DRILL" (Nagourney et al., 2018). The alert was not without merit; escalating verbal spats, including nuclear use threats between the United States and North Korea, were ongoing between the two countries. North Korea had explicitly threatened Guam in August 2017 after launching over Japan a Hwasong-12 intermediate-range missile (Lendon & Berlinger, 2017). In the months prior to the alert, the Hawaiian government had openly warned the populace via television commercials to be prepared for a possible nuclear attack and sounded a test of its air raid sirens on December 1st, 2017 (Kaleem, 2017). The Hawaiian island of O'ahu is a strategic military target. It contains Marine Corps Base Hawaii, the Naval and Air Force Joint Base Pearl Harbor – Hickam, the Army's Schofield Barracks, and the United States Indo-Pacific Command's four-star headquarters. Fortunately, the alert

message was not real but rather part of an exercise that a single government worker misinterpreted (Kang, 2018).

To glean information on individual actions in light of this kind of hazard, FEMA's nuclear oversample queried residents of large urban centers (primary nuclear targets) and their suburbs such as Washington D.C., Denver, New York, Miami, and Los Angeles. FEMA also included Honolulu and residents of Guam. Responses were aggregated by state. Figure 15 shows the variation of *daystotal2* preparedness, by location based exclusively on FEMA's nuclear oversample population (n = 500). Guam and Hawaii have the highest rates out of thirteen locales. There is no discernable pattern among the continental states. While Washington State is in the top five, so are Colorado and Florida. Illinois, Texas, New York, New Jersey, and Pennsylvania residents are the bottom five.

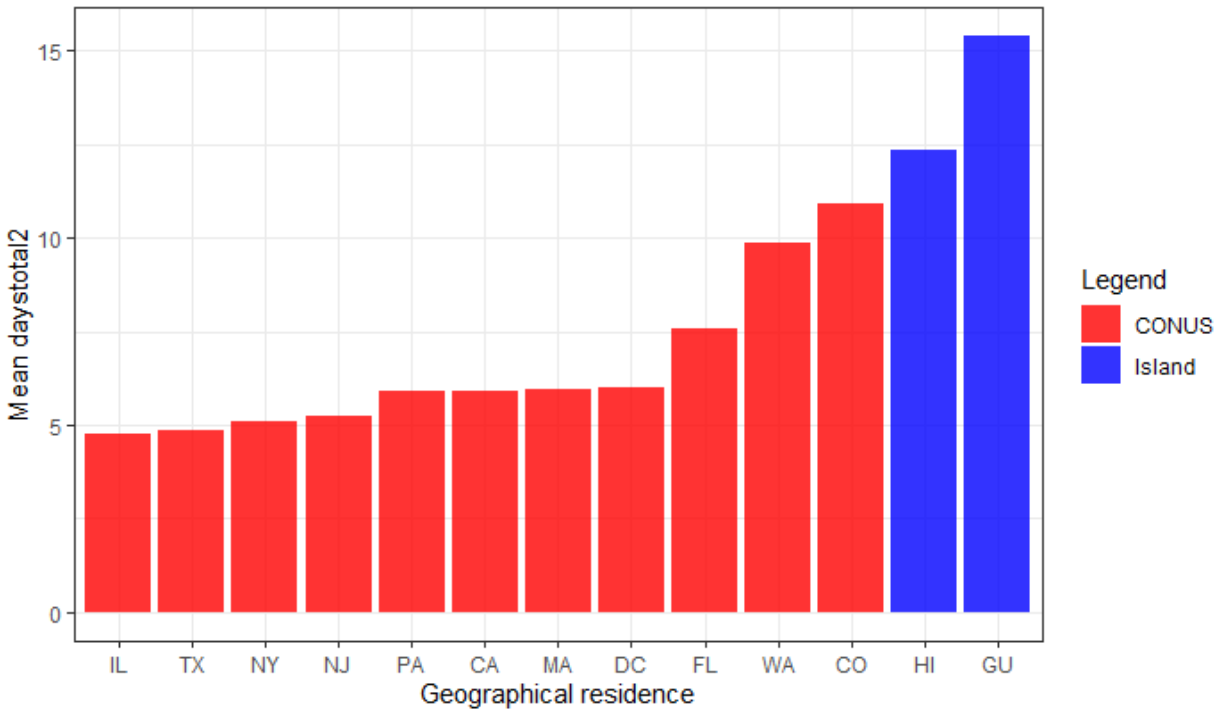

Figure 15: Mean total days of preparedness, Nuclear oversample respondents only

The boxplot, Figure 16, comparing *CONUS* to, in this case just two islands, shows the spread of preparedness (logged). Showcasing the summary statistics here seems helpful so they are depicted in Table 7.

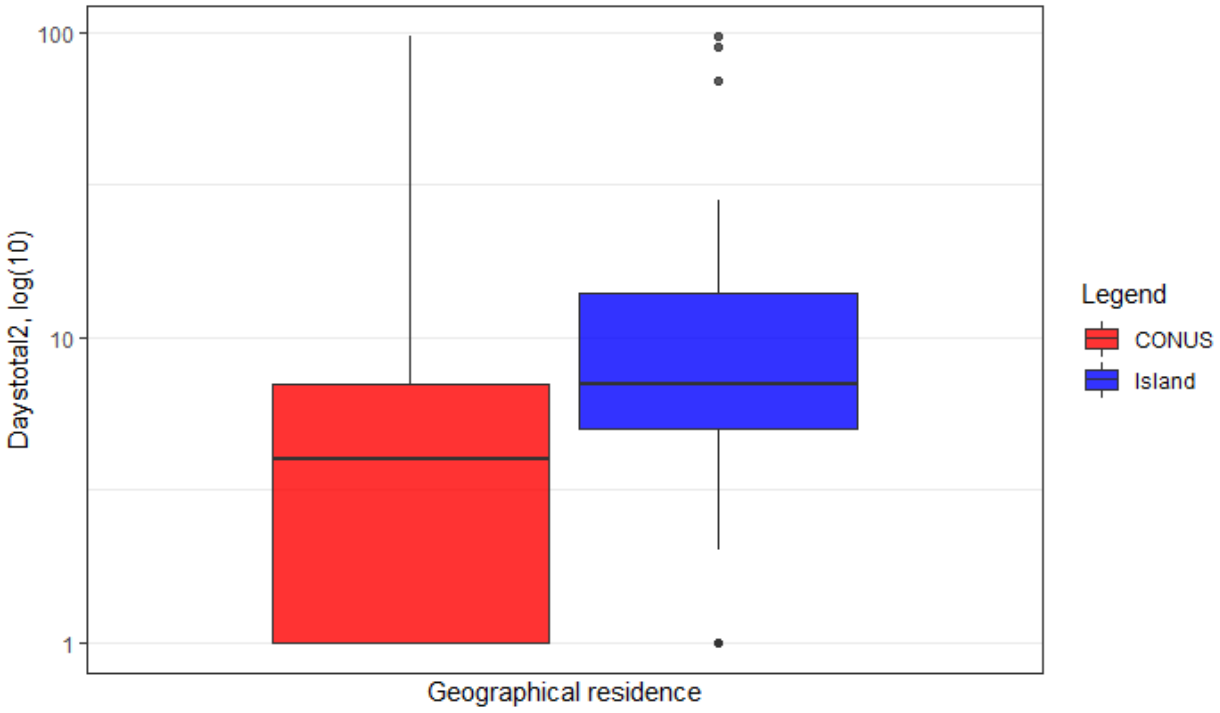

Figure 16: Comparing days of preparedness for a Nuclear Event, *CONUS* vs. *Islands*

	Min.	1st Quartile	Median	Mean	3rd Quartile	Max	NA's
Islands	1.0	5.0	7.0	14.3	14.0	97.0	1
CONUS	1.0	1.0	4.0	6.1	7.0	97.0	147

Table 7: Tabulated *daystotal2* Nuclear Event oversample summary statistics, *CONUS* vs. *Island*

There is over a full week's difference in total days of preparedness (a 134% increase) between island residents and mainlanders from the nuclear oversample ($p < 0.01$), the largest spread of any combination in all the disasters I analyzed. For the biggest impact (severity), across the

entire 2018 FEMA dataset, only 20 people chose a nuclear event, and none of them were from an island. As to likelihood, 175 of the 500 members (35%) of the nuclear oversample queried thought a nuclear explosion was likely where they lived. Broken down geographically, 56% of islanders thought it likely (25 of 45) and 33% of mainland residents (150 of 455).

Preparedness steps, even for a nuclear explosion, are beneficial and thus logical. While those individuals at ground zero or within the blast and overpressure radius have a high chance of immediate death or significant radiation poisoning, there is a far larger portion of the populace in the fallout zone (Deitchman et al., 2018). Each day of sheltering-in-place allows the half-life of radioactive nuclides and debris to decay to lower levels, facilitating less risky evacuation (Deitchman et al., 2018; Federal Emergency Management Agency, 2018).

From all of the examples given in this section, it appears that both severity and likelihood are causal factors which the island variable helps bring to light. Thus, the risk perception influencer that FEMA or the M-K model uses might not be the best explanatory variable in its current form. The interaction of perceptions on severity and likelihood, coupled with beliefs on what government can do for mitigation and response (i.e., the heuristic "breakpoint" for state failure), does seem to hold. Connection to prepper research seems initially to be validated by these findings.

V. Conclusion and future analysis recommendations

A consistent theme throughout a battery of hazards emerges that US island residents prepare for a disaster via personally procuring supplies at significantly higher rates than their mainland counterparts. This conclusion goes against both the predictions that there would be

no difference and that, if there were, it would be islanders having a lower level of resiliency as measured by the two outcomes of interest. Results were robust to both natural and manmade events as well as two separate levels, that of a three-day emergency kit and that of the total days one could stay at home without power, water, or transportation. Why might this be?

Neither the FEMA Influencer Model nor the M-K Model accounted for a geographic split.[151] In those models, geography may be endogenous within risk perception, and with it the issues of a fear of state failure. If true, then FEMA's data seems to quantitatively support the prepping world's qualitative literature supposition of this factor. It appears that as the perception of risk severity goes up, so does the belief that official help may be long in coming due to the simple physical separation of aid to point of need. Individual mitigation steps to remain sheltered-in-place for longer durations therefore act as a form of household insurance. Developed from arguments earlier in this dissertation, I believe the logic of time probability and the desire to attain ontological security features prominently in the minds of more islanders. Furthermore, what ties many of the disaster preparedness themes together is the concept of self-sufficiency, including FEMA's "Culture of Preparedness," the Sendai framework principles, and the prepper literature which prizes this autonomy. If state failure is partly the problem, household resilience is partly a remedy.

Several pathways for future study emerge from all of this. First, comparing both models side-by-side also indicated that there may be some concern regarding equifinality. Not all people are motivated to prepare for the same reasons. FEMA's 2018 National Household

[151] FEMA uses geography to determine only the most likely hazard in its oversample groups but does not predict or comment on how this impacts levels of preparedness.

Survey Executive Summary hints at up to three additional coding frameworks that could be worked into multivariate analysis. Second, FEMA's own questionnaire could be updated to tease out some of the nuances. Regarding the fear of state failure, questions regarding the duration of a disaster's impact until power, running water, or transportation would be restored would be an excellent addition. A generic version could be "How long would you expect it to take until life returned to normal?" or "How soon would you expect government aid to your household (or the community) if (disaster X, Y, or Z) happened?" Parsing out both of these against the most likely and most severe disasters for a community would also be assistive as well as the impacts of repeated exposure rather than a single exposure. Mills and Huddleston both found that repeated exposure of news media coverage regarding the disasters that befell others pushed many preppers into action or kept them fueled for vigilance. Simplifying the "preparedness steps help" question could reduce uncertainty in responses from that query, and coding income on a continuous scale would be some of my further recommendations. Third, national-level preparedness surveys for Small Island Developing Countries would be fruitful to investigate if Grenada residents prepared at levels similar to those in Guam or Puerto Rico. This level of analysis, as it is focused on the preparedness of individuals rather than state action, is also in keeping with the current field of human security. In addition, understanding motivations with hard data contributes heavily to the burgeoning analysis of disaster preparedness at the household level.

There is also a provocative implication to this finding of state failure. In the example of islands, part of my supposition is that the ratio of disaster size to island size is rather small and can even approach one. That is, certain disasters can encompass vast swaths of the geography,

some can entirely engulf an island as was seen from Hurricane Maria and Puerto Rico. Given this, people prepare at higher levels since their "chance", via time probability, is high of being hit sometime in their lives. If true, is this psychology scalable? Anecdotally the answer is yes. Israel, Finland, South Korea, and Switzerland are all smaller states, but not islands. Yet each faces (or prepares for, in the case of Switzerland) a large-scale manmade disaster, war. Those countries all indicate higher levels of preparedness in their populations. Perhaps fears or realities of future larger events such as nuclear war, climate change, overpopulation, food insecurity, or others could trigger higher preparedness in even large states.

There is always the chance I may have missed something in my analysis. With such a small pool of island residents, I did not feel confident in adding additional variables such as income, race, an urban-rural divide, and several others as done in Chapter Two. Due to the lack of significance achieved by looking at the island-only models, I feel this is prudent. In future research, I hope to conduct a large-n survey in Hawaii, to see if there are inter-island differences. Perhaps it is the presence (or absence) of military personnel; both Guam and Hawaii have a large armed forces footprint. Additionally, since this is a quantitative study, I may have missed factors only revealed by qualitative research. Anecdotally, I know several coastal and island residents believe that if a disaster struck, they could live off the abundant sea life or tropical fruit common in certain areas; much like hunters in rural areas think similar thoughts. Geography may intertwine with self-sufficiency based upon population density or the bounty of the land and waters to provide sustenance.

As a final note, FEMA's Influencer Model may indirectly yield a final benefit. If citizen confidence is genuinely a large factor in preparing – and as history has shown, there are

disasters whose impact lasts more than three days – FEMA could best support people by providing templates of emergency kits of longer duration (i.e., 7-, 14-, or even 30-days). This advice seems especially poignant given the current COVID-19 crisis. If there is truly nowhere to run to and nowhere to hide from a global calamity, increased individual resiliency is a sound and timely investment.

Chapter Appendix

There are a few points about the data for full disclosure. First, not all questions were asked of all groups. For example, those living in wildfire-prone areas were asked specific questions regarding wildfires to which no other group was subject. Second, some questions led to follow-on queries based upon the response of the parent question. Third, many questions had as valid responses a variation of "don't know" or "refused to answer." Because of these facts, unless otherwise indicated, I have stripped out all blank responses and additionally removed all "don't know" or "refused to answer" replies and conducted calculations based solely upon clear answers. Fourth, FEMA's initial data was not always accurate in the place of residence of the respondent. Where this could skew results shows up primarily in the oversample population. For example, if FEMA selected an individual for the hurricane group because FEMA believed they lived along the coast of North Carolina, but that individual had since moved to Nebraska, they were still kept in the hurricane set.

Last, FEMA clusters its findings in its executive summary into preparedness profiles, "stages of change," and a separate "six basic preparedness actions" summary metric. While the three are related, they are not identical. Nor do they relate directly to its FIM. While helpful for a synopsis of certain averages, I leave an analysis of these separate potential models for further study at a later time; I do not engage FEMA on these groupings in this chapter.

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CHAPTER FIVE

Conclusion

Sizable and long-term effects disasters are a part of human history. In the account of Noah, God annihilated all life on earth, save a small remnant of people and animals on an ark. According to the Bible, they lived on this ship for months before returning to dry land. In ancient secular times, the Greek historian and military general Thucydides wrote of the Peloponnesian War, mainly fought between Sparta and Athens that lasted for decades. While his prose focused on battle reports – with conflict itself a disaster – he also bore witness to an outbreak of the plague in Athens which may have cost them the entire war. Thucydides wrote of:

> "the awful spectacle of men dying like sheep, through having caught the infection in nursing each other. This caused the greatest mortality. On the one hand, if they were afraid to visit each other, they perished from neglect; indeed many houses were emptied of their inmates . . .. Men now did just what they pleased . . . they resolved to spend quickly and enjoy themselves, regarding their lives and riches as alike things of a day. Perseverance in what men called honor was popular with none . . . fear of gods or man there was none to restrain them" (Strassler, 1996).

As another example from history, in June 1783, the Laki volcano erupted in Iceland. Lava flows and poisonous gas release *continued into the next year*. Eighty percent of the island's sheep died from exposure, and over 20% of the human population from gas and famine (Jones, 2018). Sulfur dioxide belched high into the upper atmosphere, where it lingered for months and traveled across the globe, wreaking havoc. The eruption caused drought and famine in Egypt, killing 600,000 people (Ibid). Worldwide, upwards of six million people died of the eruption's direct or indirect effects (Hannigan, 2012).

COVID-19 is merely a contemporary incarnation of persistent, long-lasting, and geographically dispersed catastrophes. Modern technology, including transportation, forecasting, and scientific advancements, has done wonders to alleviate many challenges, but

threats remain, and so do consequences. Chapter Two opened with Günter Walzenbach bemoaning "the relative neglect of non-elites and an all-too-often missing recognition of ordinary individuals." Chapter Four discussed a first-image reversed argument in the same vein. But several governments do encourage relatively higher levels of preparedness.

Countries tailor their disaster advice to their national needs, and citizens respond both to this and perceived threats according to ontological security and the model I introduced in Chapter Four. In earlier chapters, Switzerland and Israel were mentioned for their mandated bunkers, but they are not alone in large-scale war-based civilian disaster preparedness. Threats of nuclear exchange reached a heightened pitch in 2016-2017 due to icy relations between the United States and both Russia and North Korea, especially in light of the latter's nuclear tests.

Russia had 40 million people partake in a national civil defense exercise (Nemtsova, 2017). The article noted, "Sergei Markov, a member of the Civic Chamber, a Moscow-based state institution" stated "I personally plan to stock 200 cans of pork to be ready for a potential war crisis . . . and I advise everybody to do the same." Nearby Finland does not require citizens to possess a bunker, but 85% of the country's disaster shelters are privately owned (Finland Ministry of the Interior, n.d.). Including the 15% that are publicly run, this is enough to cover two-thirds of the population. Next door, a recent Swedish national disaster pamphlet is conflict scenario oriented. The booklet reminds the populace that war means "total defence (sic). This means that everyone who lives here and is between the ages of 16 and 70 can be called up to assist in various ways in the event of the threat of war and war. Everyone is obliged to contribute and everyone is needed" (Swedish Civil Contingencies Agency, 2019). The tract mentions a profound national level shift in the nature and scope of threats asserting:

> "For many years, the preparations made in Sweden for the threat of war and war have been very limited. Instead, public authorities and municipalities have focused on building up the level of preparedness for peacetime emergencies such as flooding and IT attacks. However, as the world around us has changed, the Government has decided to strengthen Sweden's total defence (sic). That is why planning for Sweden's civil defence (sic) has been resumed. It will take time to develop all parts of it again. At the same time, the level of preparedness for peacetime emergencies is an important basis of our resilience in the event of war."

A full 30% of the 20-page pamphlet mentions or illustrates war or terror attacks, an example of which Figure 1 illustrates.

Figure 1: Excerpt from Sweden's disaster pamphlet "If Crisis or War Comes"
(Swedish Civil Contingencies Agency, 2019)

In South Korea, sources reminded citizens of the 24,000 shelters in the country and that North Korea attacks could be standard artillery shells, chemical munitions, or nuclear bombs (Se-

hwan, 2017). Preppers and prepping began trending during the recent North Korean crisis and the Ministry of Public Administration and Security formally advised households to gather 15-30 days of food and other emergency supplies in case of war (Min-hyung, 2017).

If we measure resiliency as a good thing and if the concept, even at higher levels, is normalized as rational, perhaps that might encourage more states to encourage greater preparedness levels in their citizens. Disasters are about people and those ill-prepared societies seem to lose out, be it deaths, economic ruin, or losses of freedom. As I write this final chapter, COVID vaccine passports are under discussion in several countries, like for citizens in Britain to visit certain public establishments such as pubs. In America, millions of Texans were recently without electricity or natural gas due to frigid weather. For those lucky enough to have retained power, some home bills are in the thousands of dollars (A. Garrett, 2021). The Texas electrical grid was not ready for a natural disaster of this scope.

If these are reoccurring events and if governments spend sizable amounts of money on protecting their populations – or exclusively the senior bureaucrats, as in the case of nuclear war – it should be of no surprise that individuals take it upon themselves to go to extreme lengths as well. In their own words, preppers say similar things and numerous researchers and journalists – especially among the Challengers who write on this subject – have the same conclusion. Governments and the United Nations encourage self-sufficiency in the face of disaster; it should not be surprising to see a vast swath of people take this advice to counter catastrophic possibilities.

Nevertheless, a sizable struggle has been to count and categorize preppers so that future scholars could test and augment with additional research. One that accounted for

disasters, government involvement – or government malfeasance – and tied together with the large variety of preppers seen while still strong enough to exclude ideological extremists. I believe my resilient citizen model has accomplished this.

Much work remains, though. To begin with, future quantitative work should focus on a slight tweak of FEMA's question of home preparedness longevity: "How many days do you think you could last in your home without *publicly* provided power, running water, or transportation." Turning this into a continuous variable – as opposed to a binary "do you have a three-day emergency kit" – allows for a wider range of individuals to emerge. Weeding out for extremist ideology need not be a top concern in surveys such as this, at least initially. Our first goal should simply be to get a good count, not just in America but also in other developed countries, of those on the high end of preparedness. Then researchers could continue to reach into the motivational causes and responses using a mixed-methods approach.

Another theme I noticed was the emotional divide between certain authors, those with and without despair. The book "*Notes from an Apocalypse: A Personal Journey to the End of the World and Back"* is a prime example (O'Connell, 2020). The book ended on a sour note, a forlorn whimpering that everything would be wiped away. In contrast, other accounts seemed more optimistic. There would be a tribulation for certain, but there was hope for a rebirth, a chance to try again. Is hope a key ingredient for resilient citizens? Is it more present in island residents or among the Faithful or Noahs?

How exactly does high resilience in a disaster domain spread and is it related to overall personal resilience? Connecting to sociobiology and psychology "personal resilience has a dizzyingly long list of correlates", including innate personality traits, genetic markers, religious

beliefs, and social resources (Zolli & Healy, 2012). These authors note mental fortitude, to some degree, can be taught. What comes first then, resilience or disaster preparedness? Do resilient citizens possess the psychological traits of personal resilience or the gene alleles for readiness in higher proportions than the general populace? Given that some genes only express given an environmental stimulus, does a disaster – or merely the fear of one – activate preparedness desires via the framework of the gene-environment interaction? Or is disaster resilience purely – or primarily – a sociological phenomenon?

Like state governments, some members of the Faithful can increase preparedness via church mandate. Portions of this play into our innate herd instinct, always attempting to fit into the approved codes of behavior (like Finland's private bunkers). The wearing, or non-wearing of masks during COVID shows how quickly and powerfully identification with a group can be, even during a crisis. An apocryphal statement overheard in Washington D.C. in April 2021 was "I guess I'm vaccinated so I don't have to wear a mask outside but … I really don't want people to think I'm a Republican."[152] Notably, this comment was made *after* the Centers for Disease Control said many outdoor activities were fine for vaccinated individuals to partake *sans* mask. Chapter's Three and Four discussed racial and ideological factors regarding levels of preparedness. It bears repeating that if the Dominant narrative is what non-whites and liberals believe to be true, then guilt-by-association could be a factor in why groups such minorities prepare at lower levels.

Returning to the highly prepared individuals, Henry found his Australian survivalists (akin to Sentinels) increased their readiness via connection to other like-minded preppers

[152] https://twitter.com/DCist/status/1388209282030702593.

(Henry, 2016). Does this same basic model apply to Homesteaders? Once prodded to prepare, does it all boil down to one's social network? Or, is Mills conjecture of media influence most dominant (Mills, 2019)? Perhaps both are causal and reinforcing. Both Garrett and Bounds found that, at least among the exceptionally wealthy Noahs, bunker purchases were a mixture of media and what other affluent households were doing (Bounds, 2021; B. Garrett, 2020). Atkinson and Blandy found it was simply fear; ontological security was pursued via gated communities and home-as-castle concepts (Atkinson & Blandy, 2016). But these high-net-worth individuals do *not* appear to follow Henry's 12-step pathway, especially when it comes to Henry's survivalist's focus on weapons training and connecting to other preppers. Perhaps it is because the rich can contract out private bodyguards and buy into secure communities?

What of comparative statistics; are Sentinels more likely to be connected to military or police force members? Is Europe dominated by Homesteaders or the Interdependent? What about Japan or South Korea or Israel, countries all under threat from a rocket attack by hostile neighboring countries? And what of fears of state failure; is that a necessary or sufficient condition? Or, is it causal only in conjunction with other factors? Does this have a geographical component beyond the urban-rural divide or the island and mainland differences I found? Given such radical variance, perhaps my general model will be the best we can do given equifinality. Some people buy shotguns, others put chickens in the backyard, and both feel better and more secure because of their various actions.

Perhaps this indicates that my five sub-group connotations of resilient citizens from Chapter Four need a slight readjustment. I treat them as heuristic entities for purposes of understanding, but maybe it would be better to evaluate their motivations or actions as

traits.[153] Could a survey in the future show a resilient citizen was 35% Homesteader, 40% Interdependent, and 25% Sentinel? Perchance that is the better way forward for research. Maybe we discover that Mormons have more of an even split between Faithful and Interdependent qualities. However, each of these traits are derivatives of a type of self-sufficiency, again, a reoccurring theme in many prepper research works (Campbell et al., 2019; Huddleston, 2016; Imel-Hartford, 2013; Kabel & Chmidling, 2014; Lindsay, 2015; Sims & Grigsby, 2019).

What can good governments do to help? Another vein of research could be within disaster communication. Perhaps a Homesteader message resonates more with a particular demographic of households. Of course, this introduces the question of whether governments should encourage people to be in other groups such as Sentinels. The answer could be threat-based. Both Israel and Switzerland mandate a Noah trait (bunkers) but also a Sentinel approach with automatic rifles issued to segments of the population for home storage in case of war.

In the United States, former FEMA Director Brock Long pushed for a "Culture of Preparedness." FEMA's National Preparedness Goal is: "A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk" (Federal Emergency Management Agency, 2020). It further defines the whole community to be individuals and families who should "be prepared for *all* types of disasters and emergencies" (emphasis added).

[153] Earlier criticism of my term "resilient citizen" imputed that anyone who had less than 31 days was non-resilient. This is false. An individual may be a marathon runner or jog five miles a week. Both are "runners", but a "marathoner" designation more aptly describes the former. The purpose of my term is not to denigrate those at a lower level of preparedness but is meant to attempt a more positive portrayal of the extremely prepared. I use "Highly Resilient" and "Ultra-Highly Resilient" Citizens in Chapter Two as alternative breakpoints. These two terms could substitute for normal resilient citizens if that is required to avoid negative aspersions on regulars.

Could FEMA help its cause by providing templates for more extended survival levels, up to 30 days, or more? As of this writing, the world is currently over a year into the COVID crisis, and Congress has passed three stimulus bills to send money directly to people to help them survive. Had more Americans been at a higher level of readiness, could we have conducted a hard lockdown from the very beginning, much as New Zealand did? Or could we have taken the polar opposite approach and gone Sweden's route with no lockdowns at all and depended upon our higher levels of household and national level resiliency? These are counterfactuals, but worth considering.

Who knows if we will listen or learn, though? In February 2021, just a month shy of the 10th Tohoku earthquake anniversary, a 7.1 earthquake hit off Fukushima's coast. Just forty miles north of Kamaishi, Japan (from the prologue) lies the town of Miyako. The 2011 tsunami obliterated the town, destroying or damaging 4,000 buildings. Yet in the ridgelines above are old stone markers hundreds of years old, one of which bears the following engraving: "High dwellings are the peace and harmony of our descendants. Remember the calamity of the great tsunamis. Do not build any homes below this point" (Meyer & Kunreuther, 2017). But our memories are short.

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