

Antioch University

## AURA - Antioch University Repository and Archive

---

Antioch University Full-Text Dissertations &  
Theses

Antioch University Dissertations and Theses

---

2022

# It Permeated Everything: A Lived Experience of Slow Violence and Toxicological Disaster

Tara Jo Holmberg

*Antioch New England Graduate School*

Follow this and additional works at: <https://aura.antioch.edu/etds>



Part of the [Environmental Health Commons](#), [Environmental Sciences Commons](#), [Environmental Studies Commons](#), and the [Public Health Commons](#)

---

### Recommended Citation

Holmberg, T. J. (2022). It Permeated Everything: A Lived Experience of Slow Violence and Toxicological Disaster. <https://aura.antioch.edu/etds/900>

This Dissertation is brought to you for free and open access by the Antioch University Dissertations and Theses at AURA - Antioch University Repository and Archive. It has been accepted for inclusion in Antioch University Full-Text Dissertations & Theses by an authorized administrator of AURA - Antioch University Repository and Archive. For more information, please contact [hhale@antioch.edu](mailto:hhale@antioch.edu).

*IT PERMEATED EVERYTHING: A LIVED EXPERIENCE OF SLOW VIOLENCE AND  
TOXICOLOGICAL DISASTER*

A Dissertation

Presented to the Faculty of  
Antioch University New England

In partial fulfillment for the degree of  
DOCTOR OF PHILOSOPHY

by

Tara Jo Holmberg

ORCID Scholar No. 0000-0002-4319-3792

December 2022

*IT PERMEATED EVERYTHING: A LIVED EXPERIENCE OF SLOW VIOLENCE AND  
TOXICOLOGICAL DISASTER*

This dissertation, by Tara Jo Holmberg, has  
been approved by the committee members signed below  
who recommend that it be accepted by the faculty of  
Antioch University New England  
in partial fulfillment of requirements for the degree of

DOCTOR OF PHILOSOPHY

Dissertation Committee:

Elizabeth McCann, PhD, Chairperson

Jason Rhoades, PhD

Tania Schusler, PhD

Copyright © 2022 by Tara Jo Holmberg  
All Rights Reserved

## ABSTRACT

### *It Permeated Everything: A Lived Experience of Slow Violence and Toxicological Disaster*

Tara Jo Holmberg

Antioch University New England

Keene, New Hampshire

Impacts of disasters on individuals are dependent on numerous factors: local to international political dynamics, socioeconomics, geography, educational background, and outside support among others. Currently, much of disaster research focuses on those of natural origin, acute and large-scale environmental events, emergency management, and the ability of individuals, communities, and societies to prepare for, and recover from, likely known disasters in their region. However, there is a lack of data about individual experiences through ‘invisible’ anthropogenic disasters, especially those that fall under the umbrella of slow environmental violence (Davies, 2019; Rice, 2016). Through critical phenomenological autoethnography, I examine an individual experience of a preventable toxicological disaster to identify political, cultural, socioeconomic, and historical forces that precipitated the events beginning April 3<sup>rd</sup>, 2014. These same forces were examined to identify how they sustained a slow, nonchalant, response to this anthropogenic disaster in a residential neighborhood. Additionally, personal impacts of slow environmental violence including those involving health, relationships, property, biophilia, financial, and legal were examined, as well as the ongoing process of resilience and recovery. This dissertation is available in open access at AURA, <http://aura.antioch.edu/> and OhioLINK ETD Center, <https://etd.ohiolink.edu/>.

*Keywords:* slow environmental violence, phenomenological autoethnography, toxicological disaster, environmental justice, slow violence

## ACKNOWLEDGEMENTS

I would like to thank my husband, Dan, who has made this entire journey with me. Without his support, love, and teamwork, this experience and the doctoral process would have been very different, if not impossible.

Sharon Gusky has been my mentor and encouraged me to continue throughout the challenges of my experience. Thank you for your friendship and for your advice.

My family and friends have all been a constant source of support. I thank them for their belief in me.

To my committee, I thank you for your patience and guidance. Libby, for your ear, counsel, consistent reassurances, gentle nudges, and faith in my progress. Tania and Jason, for your constructive comments and careful consideration of my work.

## **DEDICATION**

For all those who have come before and all those who will come after, you are seen.

## TABLE OF CONTENTS

<b>ABSTRACT .....</b>	<b>I</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>II</b>
<b>DEDICATION .....</b>	<b>III</b>
<b>TABLE OF CONTENTS .....</b>	<b>IV</b>
<b>LIST OF TABLES .....</b>	<b>VII</b>
<b>LIST OF FIGURES.....</b>	<b>VIII</b>
<b>PROLOGUE.....</b>	<b>1</b>
<b>CHAPTER I: INTRODUCTION.....</b>	<b>7</b>
<i>Introduction.....</i>	<i>7</i>
<i>Rationale and Significance.....</i>	<i>9</i>
Researcher Positionality .....	11
The Research Context.....	12
<i>Research Questions.....</i>	<i>15</i>
<i>Overview of Methodology.....</i>	<i>15</i>
<i>Dissertation Outline and Structure.....</i>	<i>18</i>
<i>Conclusion.....</i>	<i>18</i>
<b>CHAPTER II: LITERATURE REVIEW .....</b>	<b>20</b>
<i>Introduction.....</i>	<i>20</i>
<i>Theoretical Framework.....</i>	<i>20</i>
Fast vs Slow Disasters .....	20
Slow Environmental Violence.....	21
<i>Challenges to Studying Slow Environmental Violence.....</i>	<i>32</i>
<i>Gaps.....</i>	<i>34</i>
<i>Emerging Areas of Study.....</i>	<i>34</i>
<i>Research Paradigms.....</i>	<i>35</i>
<i>Transformative Research Paradigm.....</i>	<i>36</i>
<i>Chapter Summary.....</i>	<i>39</i>
<b>CHAPTER III: METHODOLOGY.....</b>	<b>41</b>



<i>Introduction</i> .....	41
<i>Methodological Framework</i> .....	42
<i>Research Protocol</i> .....	47
Methods.....	47
Research Questions.....	48
<i>Data Collection and Analysis</i> .....	48
Writing Exercises.....	48
External Data.....	50
Validity Concerns.....	60
Authenticity Concerns.....	62
<i>Chapter Summary</i> .....	64
<b>CHAPTER IV: A PHENOMENOLOGICAL AUTOETHNOGRAPHY OF A TOXICOLOGICAL DISASTER</b> .....	<b>65</b>
<i>Home</i> .....	65
<i>Self</i> .....	84
<i>Nature</i> .....	98
<i>Community</i> .....	106
<i>Justice</i> .....	119
<b>CHAPTER V: SUMMARY, IMPLICATIONS, AND CONCLUSIONS</b> .....	<b>131</b>
<i>Introduction</i> .....	131
<i>Research Questions and Emergent Themes</i> .....	132
Research Question 1.....	132
Research Question 2.....	139
<i>Findings in Context</i> .....	144
<i>Recommendations and Implications for Practitioners</i> .....	146
<i>Recommendations and Implications for Future Scholarship and Research</i> .....	148
<i>Conclusion</i> .....	150
<i>Epilogue</i> .....	151
<b>REFERENCES</b> .....	<b>153</b>
<b>APPENDICES</b> .....	<b>176</b>

<i>Appendix A</i> .....	176
<i>Appendix B</i> .....	177
<i>Appendix C</i> .....	180
<i>Appendix D</i> .....	181
<i>Appendix E</i> .....	188

**LIST OF TABLES**

Table 1. <i>Philosophical Assumptions of the Transformative Paradigm.</i> .....	37
---	----

## LIST OF FIGURES

Figure 1. <i>Property lines of 94 and 96 Albert Street.</i> .....	1
Figure 2. <i>Photo of 94 Albert St on April 3, 2014, during the first phase of the fire.</i> .....	2
Figure 3. <i>Pyrolytic oil remaining on our outdoor grill. September, 2014.</i> .....	3
Figure 4. <i>Some of the incompletely burned tires remaining on April 4th, 2014.</i> .....	3
Figure 5. <i>Tar, oil, and particulates covering the shakes of our home. April, 2014</i> .....	4
Figure 6. <i>Aqueous foam containing PFAS used on the tire fire.</i> .....	5
Figure 7. <i>The southeast corner of my house at 94 Albert St, summer 2016.</i> .....	66
Figure 8. <i>Our first view of the fire from an upstairs window. April 3, 2014.</i> .....	67
Figure 9. <i>The view from our car as we evacuated one hour later. April 3rd, 2014.</i> .....	68
Figure 10. <i>Our rain barrel and gutters are coated in oil. April 5th, 2014.</i> .....	69
Figure 11. <i>The porous barriers between properties while cleanup occurred, July, 2014.</i> .....	71
Figure 12. <i>Soot and oil particles gathered at the bottom of a toilet, August, 2015.</i> .....	71
Figure 13. <i>My (formerly) white sock after walking through the yard, April 5th, 2015.</i> .....	73
Figure 14. <i>Items stored in our cellar, noted repeatedly in the defense materials, 2014.</i> .....	80
Figure 15. <i>An Order to Leave the Premises on our kitchen door, 2014.</i> .....	81
Figure 16. <i>A self-portrait at urgent care, April, 2014.</i> .....	85
Figure 17. <i>Visit notes by allergist/rheumatologist, April 9, 2014.</i> .....	88
Figure 18. <i>Progress notes by allergist/rheumatologist,, April 7, 2016.</i> .....	89
Figure 19. <i>Diagnostic notes from psychiatrist, 2017.</i> .....	94
Figure 20. <i>Ani taking shelter in the hotel bathroom, April 2014.</i> .....	95
Figure 21. <i>Oil covered booms on the sidewalk in front of our property, April 2014.</i> .....	99
Figure 22. <i>The Department of Public Works vacuuming storm sewers, April, 2014.</i> .....	100

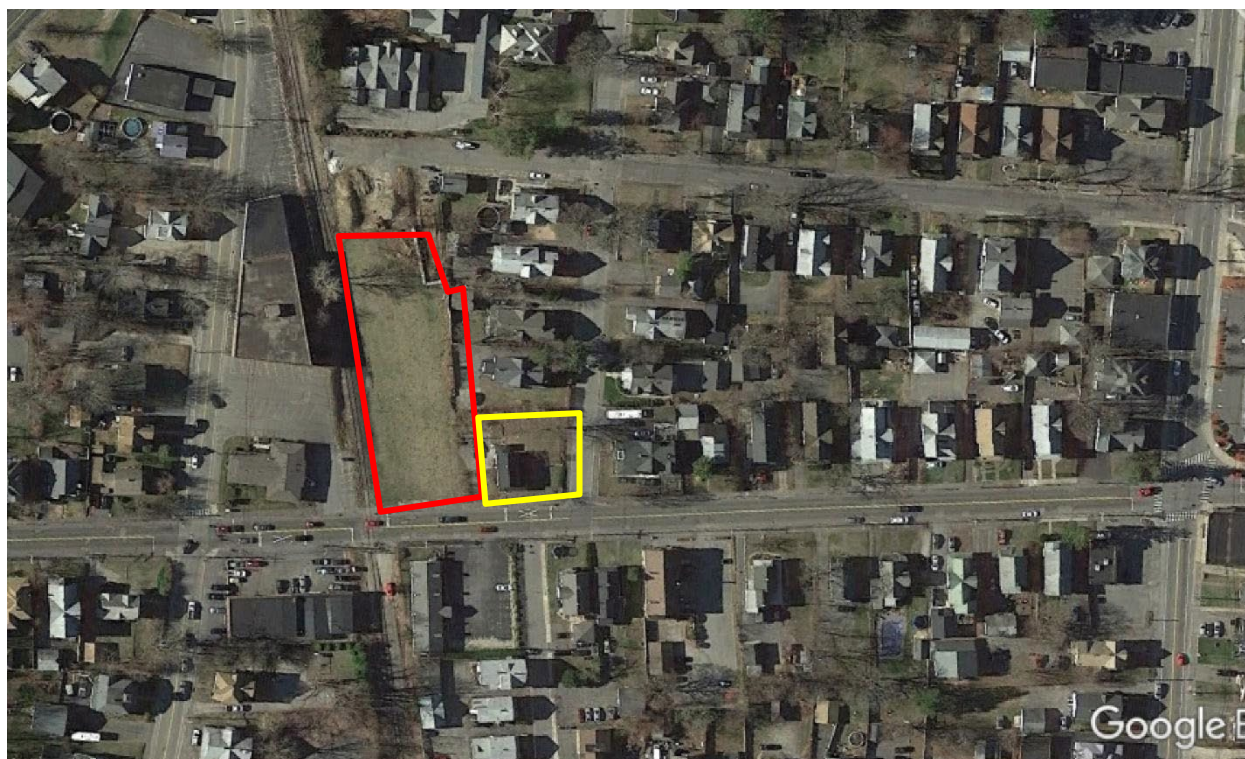
Figure 23. <i>A cleanup technician in an oil-covered jumpsuit walking through the demolition site.</i>	
<i>June, 2014</i> .....	101
Figure 24. <i>Moran Environmental Recovery cleaning the banks of the Naugatuck River, April</i>	
<i>10th, 2014.</i> .....	104
Figure 25. <i>Four photos stitched together to show the damage to the warehouse at 96 Albert St,</i>	
<i>April 4th, 2014.</i> .....	107

## PROLOGUE

My husband, Dan, and I lost our home and all our belongings in a life-altering event on April 3-4, 2014. A five-alarm fire at the warehouse next door (96 Albert St, Torrington, CT) burned for nearly 24 hours before it could be fully extinguished (*Fire Causes Environmental Concerns*, 2014). Nothing was salvageable from the warehouse (Figure 1). Upwards of 8000 tires, both passenger and heavy industrial, unknown amounts of industrial chemicals, heavy construction equipment, aluminum cladding, and other metals covering the masonry all burned about 40 feet from our home (Figure 2).

### Figure 1

*Property lines of 94 (yellow) and 96 (red) Albert Street in 2019 © Google Earth*



**Figure 2**

*Photo of Albert St on April 3, 2014, during the first phase of the fire ©The Republican American*



Note: Our house is in the middle of the black plume.

The tires burned incompletely, important in the toxicology of rubber combustion. Liquid rubber and pyrolytic oil, a known carcinogen, rained down on the properties in the area (Green Ecology, 2015; Williams & Taylor, 1993) (Figures 3 and 4).

**Figure 3**



**Figure 4**



Our house at 94 Albert Street did not burn but winds and drafts created by the fire carried nanoscale, carbon black particles into our home through cracks and crevices, lodging them in



every porous substance: furniture, paper, plastic, ceramic, plaster, wood, and sheetrock (Figure 5).

**Figure 5**



Millions of gallons of water and firefighting solvents containing per- and polyfluoroalkyl substances (PFAS), known carcinogenic compounds, ran untreated through the neighborhood, including our property, and into the local Naugatuck River (Figure 6) (Assurance National Foam, 2021).

**Figure 6**

*Aqueous foam containing PFAS used on the tire fire ©The Republican American*



While there were environmental impacts on the local river and surrounding landscapes, our own health and safety became my prime focus for months and years afterward. We were affected physically from sheltering in place. The chemical burns on our faces and in our throats and lungs did fade over time but the psychosocial impacts run much deeper. With a year of treatment, including counseling and medication, I began to process the events and aftermath, as well as how I could use my unique view and experiences to help others.

Stepping back and reflecting on the larger picture, I can see critical faults in the systems that are supposed to protect communities from these types of events, either before, during, or after. An interconnected system of public, private, and quasi-public entities are charged with assisting in prevention, mediation, and cleanup of a toxicological event (Agency for Toxic Substances and Disease Registry, 2022; Environmental Protection Agency, 2022a, 2022b; National Indian Health Board, 2022; Occupational Safety and Health Administration, 2022).

However, in my own experience, as in many similar toxicological cases, the systemic safety nets break down partially, or completely, for neighborhoods that are underdeveloped or undereducated leaving residents to fend for themselves. The reasons for the breakdown are many, including complicated scientific concepts, powerful political and economic pressures, lack of media attention, poor funding of municipal offices, and overstretched public employees, to name a few.

It quickly became clear through email, phone calls, and legal meetings that the battle for justice from the companies that own the building and its contents and with our insurance company to replace our losses, especially the loss of our home, was going to be a long haul; in fact, it lasted more than four years. The justice system is intended to allow those who have been harmed to pursue litigation in civil court for restitution of their losses. But this pursuing legal action only works well for those who have available time and the means for representation that specializes in such cases. In the end, the powerful and connected actors often walk away relatively unscathed, both financially and physically.

The end of my litigation was not the end of my experience; it was just the beginning. The beginning of a deeper and more honest understanding of environmental and social justice; one that I could only see from the other side of this type of experience. Still, in many ways, doubtless aided by class, privilege, race, and education, I have begun to heal from the situation in which I found myself.

## CHAPTER I: INTRODUCTION

### Introduction

Environmental disasters of any type can have acute or chronic impacts on ecological and human communities and may vary temporally as well as spatially. In my dissertation, I delineate between two types of disasters: natural and anthropogenic, though they are inextricably linked and their outcomes may often be the same (Lakshmi & Kumar, 2015; Powers et al., 2019; Shaluf, 2007). Disasters that initially arise from a natural source (e.g., tsunami) may damage the built environment, triggering increased mortality, morbidity, and economic damage. Human-initiated events (e.g., a dam bursting) impact the natural environment, in turn, increasing their toll on human communities. Humans are also intensifying natural disasters and reducing the natural world's resiliency via escalating global change (IPCC, 2021).

Disasters have always been a backdrop for humans. In each region, certain natural disasters are expected over others. However disasters as a whole may best be seen as “relational events between the natural, environmental, and ecological on the one hand and the political, sociological, and cultural on the other” (Eda, 2015, p. 95). Others have defined disasters as “a combination of technical faults, and a failure of social systems made up of technical, social, organizational, and institutional factors, primarily induced by human activities” (Mutiarini et al., 2022, p. 2). As with most disasters, toxicological events are unexpected. What sets them apart is that they are often undetectable until they begin to affect the health of non-human organisms in the area, especially regarding environmental quality, known as Biological Early Warning Systems (Bae & Park, 2014; Maradona et al., 2012; van der Schalie et al., 2001). For many toxins, human health may already be compromised by the point of detection.

Research in first-person accounts of natural disasters has been done in various regions around the world (Becker et al., 2017; Brooks et al., 2018; McEwen et al., 2018; Okazaki &

Shaw, 2003; Oktari et al., 2018; Ozkazanc & Yuksel, 2015; Preston et al., 2015; Van Niekerk et al., 2018). However, few studies have incorporated first-person narratives of anthropogenic toxicologic events due to the limitations of research design and access to the Academy. These limitations have been recognized as a gap in disaster research (Bertomeu-Sánchez, 2020; Davies, 2019). While it is acknowledged that scholars have given thought and research to the communities impacted by many types of anthropogenic disasters, including pollution, those living the experiences have “situated knowledges” and a “wide range of embodied ways of knowing polluted environments” that have not necessarily been reflected in the literature (Davies, 2019, p. 10). “The inhabitants of landscapes that have been subjected to slow violence can be better placed than anyone to see the brutal ramifications of pollution gradually unfold” (Davies, 2019, p. 11). Given these gaps in the toxic disaster research, the nearest analog to these events is that of slow environmental violence, which serves as the theoretical framework for this phenomenological autoethnographic study (Davies, 2018, 2019; Vorbrugg, 2019).

This dissertation explores questions about my lived experience of a toxicological event. Through a phenomenological autoethnographic analysis, various aspects of more than four years of acute and chronic toxicological impacts will be critically examined using a lens of slow environmental violence as the theoretical framework (Nixon, 2011a). In other words, this study provides a narrative on toxicological violence, per Ellis et al (2011), “to find and fill a gap in existing, related storylines” and uses this knowledge to “illustrate new perspectives on personal experience” (p. 5). To date, this framework has not been used to investigate a toxicological impact from a first-person perspective.

This research uses the theoretical framework of slow environmental violence to explore the lived experience of a toxicological event stemming from a tire fire and its underlying causes

on April 3rd, 2014, through phenomenological autoethnography. While slow environmental violence has been increasingly researched in the past decade, phenomenological autoethnography has not been used in this context and provides an insider's view of the impacts, experiences, and consequences of slow environmental violence on an individual and a family (Davies, 2019; Iengo, 2022; Willett, 2015; Willett et al., 2021). Slow environmental violence often contradicts the prevailing narratives of disaster. The relative pace of the impacts, the geographic scales, and the lack of story outside of the affected community make many of these cases 'nonvisible'. As Rice (2016) states, "explicit consideration of slow environmental violence is to better see, evaluate, and confront such issues before they have reached such a point" (p. 179). The first-person perspective of phenomenological autoethnography can provide alternatives to prevailing concepts of disaster and help round out the theory of slow environmental violence.

### **Rationale and Significance**

With an uncertain environmental future in front of humans and our planet, now is a crucial time to help individuals adapt to coming unknown anthropogenic degradation, including climate and environmental change (Ahmed & Fakhruddin, 2018; Davies, 2018, 2019; Eriksen et al., 2021; Higuera, 2017; IPCC, 2021; Piguet, 2022; Preston et al., 2015; Sietsma et al., 2021; Singh et al., 2022; Tidball, 2012; World Economic Forum, 2022). Those individuals and institutions with some measure of power, privilege, and education can assist by better understanding the dynamics of those most at risk, including how they can cope with, and emerge from, a disaster (Aburn et al., 2016; Adams et al., 2017; Aldrich, 2017; Aldrich & Meyer, 2014; Davoudi et al., 2012; Southwick et al., 2014; Van Breda, 2001). Community development groups can use this information to assist and strengthen resilient and adaptable networks of citizens, able

to advocate for their own wants and needs in times of crisis and beyond (Hemachandra et al., 2018; Kankanamge et al., 2019; Willett, 2015; Willett et al., 2021).

Numerous benefits are anticipated from this research. The first is to address the gap of first-person accounts in the slow environmental violence literature as noted by Davies (2019). The second is to apply a slow environmental violence theoretical framework to a methodology uniquely suited to the task (phenomenological autoethnography) as detailed below (Vorbrugg, 2019). Additionally, I hope this research gives academics, community groups, and others working in contexts of slow environmental violence and anthropogenic disasters insights into the dynamics and personal impacts of a specific toxicological event. As Davies (2019) states: “slow violence does not persist due to a lack of arresting stories about pollution, but because these stories do not count, thus rendering certain populations and landscapes vulnerable to sacrifice” (p. 411). This first-person accounting of a toxicological disaster and view of the impacts through the lens of slow environmental violence may help to further the stories of those impacted by these events. As a burgeoning area study in and of itself, additional contributions can help the field of slow environmental violence grow in new and profound ways (Fisher, 2021). Finally, it is also hoped that the insights gathered from this research can be extrapolated to other types of slow environmental crises (Davies, 2019).

As one instance of many similar events throughout the region, this signifies a larger issue, or one that fits Rittelbur and Webber’s (1973) idea of a ‘wicked problem’, a “a high degree of scientific uncertainty and a profound lack of agreement on values, combined with the absence of a perfect solution” (Balint et al., 2011, p. x; see also Lönngren & van Poeck, 2021). This event was not a single accident in time, but rather was centered within a landscape of a culture that deprioritizes the marginalized, protects big business, prides legacy politics, and promotes

economic growth over all other concerns (Ahmad, 2020; Armiero, 2021; Faber et al., 2021). By exploring the culture in which this slow violence occurred, its impacts on myself, and the lessons that were learned, scholars can better understand the lived experience of a slow toxicological violence and ensure these stories count (Davies, 2019). In addition, it is hoped that through this phenomenological autoethnography individuals and communities might be better able to navigate a similar occurrence in the future.

As humans become further at risk for unpredictable events with climate change, it is increasingly important to understand the potential of individuals to be resilient in the face of adversity, including how they might better prepare for such crises on in areas such as planning, public health, politics to reduce their disaster risk, or Disaster Risk Reduction (DRR) (Kitagawa, 2018, 2019). To fully grasp such wide ranging, broad scale concepts, it is important to define the research positionality and context that informed both my framework and research questions.

### **Researcher Positionality**

I am a middle-class, heterosexual, cisgender, white, professional female with three graduate degrees and a strong foundation in environmental and natural sciences. I am a full-time Professor in Environmental Science and Biology at a small community college in Connecticut and lead professional development for educators on a national level. I have faced significant health challenges, including chronic asthma and two different forms of cancer; I am now disabled due to a progressive autoimmune disease. My experiences with my corporeal body have taught me about pain, suffering, and resilience. I have also faced discrimination due to being a woman in STEM and because of my disabilities. For example, I have experienced gender stereotyping, gender discrimination, harassment, discriminatory statements, social exclusion, and marginalization in my career, at the workplace, and in public (Lindsay & Fuentes, 2022;



Schiavone, 2021). These experiences have ‘thickened my skin’ and, unfortunately, molded a more detached version of myself.

On the other hand, I have been privileged to have access to fair or good medical care throughout my life. My education, privilege, career, and background have allowed me the space, freedom, and finances so I could pursue PhD research in environmental studies. These life challenges and advantages led me to both insider AND outsider status in my community. At once, I am both atypical and typical in my experience in my community of a neighborhood within the south end of Torrington, Connecticut due to my background. In addition, the toxicological disaster I experienced is both unusual in its origin but typical in its impacts.

### **The Research Context**

This research explores my lived experiences of an anthropogenic disaster in the form of a tire fire that occurred in the Northeast region of the United States/community where I lived when this event took place. Through phenomenological autoethnography, I explore my individual experiences of this toxicological disaster through the lens of slow environmental violence (Baxter & Jack, 2015; Creswell & Creswell, 2018; Mills et al., 2010; Yin, 2008). This combining of phenomenology and autoethnography allows for an understanding of the meaning of a particular phenomenon while also exploring an experience of being part of a culture (Pitard, 2016; van Manen, 1990). It is understood that impacts of the toxicological disaster reached beyond the spatial scales I personally inhabited, including the biosphere, and there are long-term impacts on myself that I will carry through my life.

Spatially, my direct physical experiences were within the South End of Torrington, Connecticut, including the natural, residential, commercial, and industrial zones of the area. Temporally, the transforming toxic event is clear in day and time but there were precipitating

systems, actions, and decisions which pre-date the actual fire (see Chapter IV). The ‘end’ of my story has not yet happened: my legal cases ended in May of 2018, but I am still dealing with many other impacts to date. Dates before April 3<sup>rd</sup>, 2014 are termed “historical” to delineate pre- and post-April 2014 events. Institution and narrative bounding of the autoethnography is critical to maintain a phenomenological approach (Mills et al., 2010). The institutional bounds are within the cultural, sociopolitical, historical, and legal system of Connecticut, USA, specifically the northwest corner of the state. The narrative is bound to my own personal experiences (Douglas & Carless, 2013; Ellis et al., 2011; Ellis & Bochner, 2000; Méndez, 2014). These experiences “contribute to others’ lives by making them reflect on and empathise with the narratives presented ” (Mendez, 2013, p. 282). In addition, autoethnography allows for experiences and larger issues to be discussed and shared in the literature without dependance on a third party to take interest in the story (Méndez, 2014; Ngunjiri et al., 2010; Wall, 2006, 2008). In autoethnography, those most impacted tell their own critical truth without risking Othering or objectification (Richards, 2008). In this dissertation, I have supported my phenomenological autoethnography with external sources, including artifacts and unstructured, reflexive interviews (Chang, 2013). This reliance on external sources has been critiqued as an expectation of ‘hard’ data to support the autoethnographer’s memories (Wall, 2008). That this expectation is a hollow form of legitimacy for what is intended to portray a “patchwork of feelings, experiences, emotions, and behaviors that portray a more complete view of...life” (Wolcott, 1999, p. 10). However, the sources and artifacts included, and dialogues conducted, were critical for the writing of this autoethnography to fill out the emotions and experiences.

A related concern, as Creswell and Creswell (2018) describe, is “the researcher’s role and reflexivity” (p. 183). By openly acknowledging my experience and transformation, I hopefully

identify those areas of my past and present that may influence my interpretations (Creswell & Creswell, 2018). My overriding hope for this research is that it helps inform the work of those researching the individual experiences of slow environmental violence from toxicological events, as well as those in disaster preparedness and resilience.

My larger community is the city of Torrington, CT, population 35,357 (US Census Bureau, 2021). Specifically, at the time this study is centered, I lived in a particular area of Torrington known by locals as the “South End”. This region of the city is largely a marginalized, ‘sacrifice area’ or fenceline community, although, as with many neighborhoods, it is not homogenous (census tract #9005310300). Sacrifice areas are those that are deemed an acceptable loss for those in power in pursuit of economic development (Lerner, 2010).

The South End has a different demographic and socioeconomic structure than the rest of the city. In the 2020 census, 64.5% of individuals were white, 24.7% were Hispanic/Latino, 8.3% were Black, and 4% other (US Census Bureau, 2021). This compares to the city overall, of which 83% were white, 9.3% were Hispanic/Latino, 3.7% were Black, 2.5% were Asian, and 2.4% were Other. The age demographics of the South End skew younger, with more individuals under the age of 40, and more than 50% of residents spend more than 30% of their income on housing. Over 13% of families were living in poverty, with the median income only half of the overall city median income of \$60,662, and an unemployment rate of 14%. Torrington’s overall poverty rate was 11.1% in 2020. As of July 2021, in Torrington, 10.9% of the population was foreign-born, with 94.1% having citizenship.

Having offered a review of the research context and importance of this study, the following sections outline the research questions, methodological approach, and methods.

## **Research Questions**

My research is guided by this driving question:

1. How, if at all, do my lived experiences reflect and diverge from Nixon's (2011a) theoretical concept of slow environmental violence, including incremental onset, ambiguous boundaries, and nonvisibility?

A related area of inquiry includes:

2. How did my lived experience inform my understanding of how the sociopolitical, cultural, historical, and economic forces led to this event and/or its impacts?

## **Overview of Methodology**

This proposed research explores a first-person account of slow environmental violence, using phenomenological autoethnography. The phenomenological autoethnographic approach was best suited to this study as I aimed to analyze a phenomenon that I experienced through a cultural perspective I was embedded in. As Reed-Danahay (2021) states, "One of the main characteristics of an autoethnographic perspective is that the autoethnographer is a boundary-crosser, and the role can be characterized as that of a dual identity" (p. 2). My dual identity (insider/outsider in my community) comes from the privileges of education, race, and economics I have been afforded while also being disabled, a woman, and the victim of a slow toxicological event.

The dual identity approach as a methodology is not new; it has roots in 19th-century thinking, African American writing such as by W.E.B. du Bois (du Bois, 2014; Zamir, 1995), and in other ethnic groups' approaches to understanding intersectionality and self-representation such as Two-Eyed Seeing (Bartlett et al., 2007; Reed-Danahay, 2021; Wright et al., 2019). It is a

“blurred genre...of anthropology, psychology, literary criticism, journalism, and communication” (Holman Jones, 2005, p. 208).

I am, through my experience, both a representative of and an outsider to the marginalized communities typically impacted by toxicological crises. Reed-Danahay (2021) describes the tension between insider/outsider status this way,

The most cogent aspect to the study of autoethnography is that of the cultural displacement...of the themes expressed by autoethnographers. This phenomenon of displacement - so linked to issues of socioeconomic change, of globalization and transculturation, as well as to the extremes of violence occurring in many parts of the world - breaks down dualisms of identity and insider/outsider status...this figure is not completely ‘at home’. (p. 2-3)

While not alone in my position as being both in and out of the community being studied, I am in a relatively unique position as an academic researcher in the realm of slow environmental violence (Scott, 2013). My personal narrative recognizes the value of the ‘look behind the scenes’, to the larger body of research: a critical accounting through narrative of inner workings of an individual, a family, and a community experiencing the phenomena of an acute toxicological event. The methodological approach of phenomenological autoethnography, and my own sense of research ethics, directs me to acknowledge and analyze my privilege as well as honor my experience.

In this study, first-person experiences were revealed through personal narrative, reflexive dialogue, and external sources. Descriptive-realistic writing and analytic-interpretative writing is woven with reflective dialogue and artifacts such as news accounts, legal documents, and photographs to produce a ‘thick description’ of the events during and after the tire fire of April

3rd, 2014 (Ellis, 2011). Here I adopt Denzin's (1989) view of thick description in that it "... does more than record what a person is doing. It goes beyond mere fact and surface appearances. It presents detail, context, emotion, and the webs of social relationships that join persons to one another" (p. 83).

My autoethnography is not merely informed by my own experiences but is also an insight to those assisting similar communities in the future. I have turned to myself to "unveil, interpret, and/or critique the social structures and the underlying power dynamics through [my] own experiences" (Keleş, 2022, p. 2026). I saw the pervasiveness of a particular political and social mindset throughout my own experience, where underserved communities and natural systems were not valued. That observation led me down this path of inquiry and I hope that my findings may lead to change for some communities in the future.

Limitations include generalizability of findings to other instances of slow environmental violence. While it is important to provide this voice, a specific set of circumstances led to this instance of slow violence in this community (Brooks et al., 2018; Carlin & Park-Fuller, 2012; Davies, 2021; Eda, 2015; Rice, 2016). In addition, my story is not the same story of others impacted by the tire fire of April 3, 2014 and subsequent events. I am both insider and outsider in my community and had the opportunity, access, and privilege to be able to tell my version of events as they had happened to me and my family. However, while this story is just one voice, it may be transferable to understanding slow environmental violence in instances of toxicological disaster, specifically tire fires, of which there are dozens in the United States every year (Ahmed & Fakhrudin, 2018; Boaggio et al., 2022; Cocean et al., 2020; Schneider, 1990). As a member of the Academe, I can analyze and communicate my findings in a way that fits research norms in

a dissertation. In addition, I plan to additionally convey my experience through other venues that will inform those outside of the Academe.

### **Dissertation Outline and Structure**

This research addresses a noted gap in the literature, provides a unique first-person account of a toxicological event and its aftermath, and may assist those working in natural and anthropogenic disaster-ology. The dissertation is presented in a traditional format to be more accessible to those it can most help for future toxicological crises: individual, governments, and community advocacy groups (Clague, 2017). In Chapter II, I present a literature review of my theoretical framework (slow environmental violence) and research paradigm (transformative paradigm). In Chapter III, my methodological framework of phenomenological autoethnography is introduced in more detail, as are my methods, data sources, and analysis techniques. In Chapter IV, my phenomenological autoethnography examines the areas where the impacts of a slow toxicological disaster were greatest in five vignettes: mental and physical health (“Self”), relationships (“Community”), property and finances (“Home”), connection to nature (“Nature”), and legal (“Justice”). In Chapter V, I discuss the findings of my phenomenological autoethnography, external sources, and scholarly literature and relate them to my original research questions. I discuss themes that arose in the data and conclude with implication for further study in slow environmental violence and for application by academics and practitioners including disaster risk reduction managers, community organizers, and others.

### **Conclusion**

This chapter introduced the dissertation which attempts to fill a gap in the literature by providing my personal account of slow toxicological violence, and its attendant injuries, from 2014 onward. Following Nixon’s (2011a) definition of slow environmental violence, the

timescale of the impacts has been incremental and persistent, the geographic boundaries are ambiguous, and the story has become invisible. I have written a phenomenological autoethnography of my experiences because, per Davies (2019) “...above all – it is the communities who are exposed to slow violence who are best placed to witness its gradual injuries” (p. 2-3).



## CHAPTER II: LITERATURE REVIEW

### Introduction

My research intertwines slow environmental violence and toxicological disasters through phenomenological autoethnography. In addition, I used a transformative research paradigm as a lens to focus the use of slow environmental violence as a theoretical framework. I include a discussion of gaps in the literature and emerging areas of study. The following literature review is divided into five key sections and provides a greater understanding of the theoretical framework and context. I also describe challenges that arise in its application for research, and then identify the anticipated benefits of the study.

### Theoretical Framework

#### Fast vs Slow Disasters

Fast, acute disaster sells. It is “sexy” in media parlance, attracting viewers and readers. For journalists who want to be part of a scoop, “...drama is the overarching element [they] are seeking” (Rice, 2016, p. 179). They are the disasters of multimillion dollar blockbuster movies and *New York Times* bestsellers (Harr, 1996), attracting tragedy tourism and bystander gawking. Businesses, influencers, power brokers, and governments act on these disasters, lest they appear incompetent or uncaring. Serious and impactful toxicological events such as the 1989 Exxon Valdez tanker spill, the 2010 BP/Halliburton Deepwater Horizon oil rig blowout, and the Fukushima nuclear meltdown in 2011, happened so acutely and at such scale that it was impossible for the responsible corporations/industries and governments to ignore. Christian and Dowler (2019) call this fast environmental violence, a violence that is “afforded a different degree of attention, concern, and response than the banal” (p. 1071).

However, as Beamish (2002a) states, “preoccupation with the ‘acute’ and the ‘traumatic’ has left us passive and unresponsive to festering problems” (p. 2). Beamish (2002b) deems these

issues under the surface ‘crescive troubles’, the types of slow, chronic disasters that build into something more acute and traumatic (such as the 40 year-long oil spill under the Guadalupe Dunes in California). These crescive disasters are given much less attention by the media or by the responsible actors, even if the impacts are much more chronic and widespread than the acute disasters the public is used to seeing (Sneed, 2015).

The difficulty of understanding such chronic impacts lies in attributing injuries and damage to the originating events: quantifying them is virtually impossible due to the timeframes involved and co-contributing factors (Beamish, 2002a). Some have tried to work through this problem by speeding up the threat of the looming disaster. For example, the use of the term ‘Anthropocene’ to describe the climate crisis and the Doomsday Clock to summarize the risk of nuclear warfare recast nebulous temporal threats from future risks to ones that are current and present (Davies, 2019). However, most environmental violence evades this type of rebranding. The following section discusses slow environmental violence as it is associated with this research.

### **Slow Environmental Violence**

‘Slow violence’ was coined by Nixon (2011a) in *Slow Violence and the Environmentalism of the Poor*. Nixon (2011a) defines slow violence as “a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all” (p. 2). To further clarify his meaning, Nixon (2011a) identified three facets that help bind slow environmental violence: incremental onset, ambiguous boundaries, and nonvisability. Rice (2016) goes on to define these three facets succinctly:

1. Incremental Onset – the “temporal distance or the gap between exposure and the expression of adverse consequence as well as temporality or the pace of change” (p. 177),
2. Ambiguous Boundaries – the “scale of slow environmental violence can be expansive and difficult to clearly pinpoint in geographical and biophysical terms” (p. 178),
3. Nonvisibility – “Slow, incremental onset and ambiguous boundaries are a recipe for social, political, and scientific nonvisibility” (p. 179).

As Nixon (2011a) emphasized in his original explanation, to engage with these facets is

“...to engage a different kind of violence, a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales. In so doing, we also need to engage the representational, narrative, and strategic challenges posed by the relative invisibility of slow violence.” (p. 2)

Slow violence “urges and helps us to address problems which are dispersed across space and time” (Vorbrugg, 2019, p. 448). More recent researchers have expanded upon Nixon’s (2011a) conceptions of slow violence in other areas of social science research including colonialism (Wakeham, 2021), gentrification (Kern, 2016), and intergenerational family secrets (Barnwell, 2019). Through literature review and case study, Wakefield (2021) expanded on the Canadian government’s 2019 National Inquiry into Missing and Murdered Indigenous Women and Girls in Canada to include genocide by attrition over slow timeframes, a feature not included in the original report. Kern’s (2016) work incorporates autoethnography and archival information to describe the change in temporal rhythms of a community through the actions of those in power as the neighborhood undergoes gentrification. Barnwell used an online qualitative survey to ask

those researching their family histories about secrets they had uncovered through their findings. Examining the temporal aspects of stigma, Barnwell proposed that secret-keeping led to a double-form of violence: the first was the initial secret, the second was the ramifications for later generations.

In recent years, critical geographers have begun to also recognize gaps in Nixon's initial approach. While Nixon (2011a) does center writers from post-colonial regions, there is a lack of recognition of the various intersectional ways that slow violence pervades communities (Jones, 2019; Pain & Cahill, 2022). Specifically, researchers are being explicit that slow violence in general is racialized, personalized, unequal, and based in white supremacy (McKittrick, 2011; Pain & Cahill, 2022). The injustices of slow environmental violence are also visited more heavily upon women, the LGBTQIA+ community, the disabled, communities of color, Indigenous peoples, non-native speakers, and others that are traditionally marginalized in modern society (Bhatia, 2022; Davies, 2018, 2021; Ray & Sibara, 2017; Stewart, 2022; Williams, 2019). Jones (2019) states:

By assuming slow violence is invisible or unfolds 'out of sight', Nixon suggests... 'a stable (white, patriarchal, heterosexual, classed) vantage point' (McKittrick, 2006, p. xiv). From this dominant perspective, Black geographies are rendered hidden and invisibilized; they are rendered 'out of sight' and out of place. (p.1081)

In his conceptualizing slow environmental violence, Nixon (2011a) notes that the actors and actions leading to outcomes that negatively impact people and nature are not always malevolent but are often due to utter disregard and a failure to respect others and nature as worthy of consideration during organizational decision making. They are part of "the

contemporary neoliberal world order” (p. 46) where the characteristics of this approach to society consists of characteristics including:

the widening chasm - within and between nations, that separates the megarich from the destitute; second, the attendant burden of unsustainable ecological degradation that impacts the health and livelihood of the poor most directly; and third, the way powerful transnational corporations exploit under cover of a free market ideology the lopsided universe of deregulation, whereby laws and loopholes are selectively applied in a marketplace a lot freer for some societies and classes than for others. (Nixon, 2011a, p. 46)

Rice (2016) speaks to the failure of responsible actors and slow violence in this way:

Slow violence, then, is a situation that could have been otherwise but for the decisions and/or nondecisions of organizational actors who possessed the latitude and some degree of empirical evidence from which to improve the situation but failed, for various reasons, to do so. (p. 177)

The concept of slow environmental violence is particularly well-suited to explore wicked problems: climate change, biodiversity loss, overconsumption, pollution in its many forms, antimicrobial resistance, desertification, monocultures, famine, and so many others (Churchman, 1967; Davies, 2019; Rittel & Webber, 1973). Vorbrugg (2019) notes that “Slow violence is not exceptional...” meaning that it is always occurring around us (p. 2). Nonetheless, incidents of slow violence have neither attracted nor maintained the attention of the media in the past, nearly ensuring that the behaviors, and sociopolitical and economic forces, leading to these traumas will continue (Christian & Dowler, 2019; Nixon, 2011a; Rice, 2016; Vorbrugg, 2019).

This lack of attention is due to numerous factors including the violence not being hot/fast, similar situations happening in multiple places, time elapsed since the beginning of the events, the science of slow environmental violence being complex, and communities affected being those already largely ignored (Christian & Dowler, 2019; Rice, 2016). Nixon (2011a) states that it is a representational challenge: “how to devise arresting stories, images, and symbols adequate to the pervasive but elusive violence of delayed effects” (p. 3). These features of slow environmental violence mean that they have the opposite draw of the fast disasters for the media, politicians, and some activists. In addition to the facets above, Rice (2016) notes “a tipping point may take years to arise or may only arise after the injurious activity has long ceased” (p.178).

### *Structural Violence*

The study of slow environmental violence is also the study of structural violence; the decay of protective systems or ignoring of warning signs implicate society at large in a form of regular systemic brutality on a segment of its population (Davies, 2019; Farmer, 2004; Galtung, 1969). As Christian and Dowler (2019) state, “Overcoming the representational challenge of slow violence requires overcoming the gendered and raced geographies of visibility” (p. 1071). Davies (2019) notes that it will take a shift in our collective environmental perspective to refocus on timeframes we are not used to in order that we recognize those systems which have allowed the slow environmental violence to manifest in the first place:

...slow violence demands we look beyond the immediate, the visceral, and the obvious in our explorations of social injustice. As a spatial concept, slow violence invites us to include the gradual deaths, destructions, and layered deposits of uneven social brutalities within the geographic here-and-now. At the same time, by unchaining our geographical imaginations from the shackles of the present, slow violence provokes us to delve into the

past to unearth the violent structures of inequality that saturate contemporary life, and may well lay waste to the future. (p. 2)

And from Vorbrugg (2019), we can view slow violence in general:

...as a cross-cutting concern that speaks to a range of different contexts and positionalities in different ways. This is one reason why it is necessary and worthwhile to take slow violence seriously as a methodological, analytical, representational, and political challenge for ethnographic studies more broadly: it urges and helps us to address problems which are dispersed across space and time. (p. 2)

However, even as slow environmental violence is continuing to be researched, accountability of responsible actors and justice for those impacted is still challenging to obtain.

#### *The Trouble with Accountability*

There is a level of ambiguity with slow environmental violence that makes it difficult to hold responsible actors to account. The most powerful and wealthy use uncertainty and doubt to their advantage when laws are initially being written and when legal cases are brought to court. In each case, “slow environmental violence is particularly subject to differential interpretive power or the capacity to dictate how the situation is given meaning discursively” (Rice, 2016, p. 179). From Christian and Dowler (2019):

Changes that emerge slowly are almost unavoidably regarded as banal, as gradual change becomes routine and often goes unnoticed or appears unremarkable. Fast violence shocks and demands attention, while slow violence lulls. Fast violence is regarded as “hot”, active, and an issue of immediate public concern, while slow violence is coded as passive, routine, and banal—to the extent that it becomes exceedingly difficult to assign or demand culpability of the actors responsible for producing slow violence. (p. 1068)

Sociology uses ‘normative drift’ to explain many of the behaviors seen by actors in industrial accidents where “threatening changes are normalized because [they] accommodate themselves to gradually evolving signs of crisis” (Beamish, 2002a, p. 10). In addition, many of the crecive disasters are “invisible” in their impacts; they are not instantly obvious like a nuclear plant meltdown or wildlife covered in oil. Thus, “...nonvisibility is a crucial factor underlying the capacity of powerful actors to evade accountability for past and present activities” (Rice, 2016, p. 176).

This is not to say that there is exclusively malevolent intent on the part of the powerful and connected but, instead, that multiple opportunities to recognize, avoid, and remedy problems (either by acting or not acting) are ignored by the actors in power in instances of slow environmental violence (Rice, 2016). Whether through implicit or explicit bias, not-in-my-backyard (NIMBY) movements, or other forms of prejudice, the effects of slow environmental violence are disproportionately felt by communities that are traditionally marginalized such as immigrants, people of poorer socioeconomic status, and communities of color (Nixon, 2011a).

In fact, much of the blame and nearly all the burden for slow environmental violence are placed on the victims of that violence and this is seen throughout society (Lerner, 2010).

“Neoliberal conceptions of health as a personal responsibility mask the structural roots of environmental insecurity” (Cairns, 2022, p. 1427).

Without a spotlight on the causes of violence that unfold gradually, the embodied impacts of violence often come to be understood as personal and private matters, in which victims are left responsible for managing the harm inflicted on their bodies. For example, cancer caused by the gradual accumulation of dispersed toxins is seen as merely a personal



problem of one's own body, and political culpability remains elusive. (Christian & Dowler, 2019, p. 1069)

In addition to arguments of personal responsibility, the responsible actors are able to use plausible deniability and the uncertainty inherent in the current methods and findings of toxicology successfully in lawsuits, grassroots actions, and the media (Lerner, 2010).

### *Media and Slow Violence*

The representational challenges are many for slow violence: “How can we turn the long emergencies of slow violence into stories dramatic enough to rouse public sentiment and warrant political intervention, these emergencies whose repercussions have given rise to some of the most critical challenges of our time?” (Nixon, 2011a, p. 3). In a separate piece, Nixon (2011b) describes how challenging it is to bring attention to toxicological exposures where “Chemical and radiological violence, for example, is driven inward, into cellular dramas of mutation that remain difficult to narrate...such invisible, mutagenic theater is slow-paced and open-ended, typically eluding tidy closure” (p. 1). Nixon's solutions include relating events through ‘striking visual imagery’, ‘reconfiguring big stories on a human scale’, ‘tell stories no one else can tell’, and ‘refuse conventional narrative frameworks’ (2011b).

There is a danger in sensationalizing slow environmental violence. In an effort to attract attention and bring light to underlying issues, those working in slow violence and environmental justice risk supporting dominant narratives and constructs about environmental violence in an effort to gain traction for a particular problem (Nixon, 2011a; Vorbrugg, 2019). In addition, slow acts of resistance may be missed by researchers and others who are looking for open protests and calls for immediate action (Li, 2014). Systemic work is being done in some areas through local and regional environmental justice movements to adjust these lenses. There have been

blockbuster movies on cases of slow environmental violence (e.g. *Erin Brockovich*, *A Civil Action*, and *Dark Waters*) but they include fast elements (and run in 2 hours or less) to spice up the narrative and keep their audience engaged, unlike the years-long slogs of health problems, legal fights, and political negotiations that the victims endured.

Sustained media attention amid slow environmental violence is difficult to achieve even with the aid of scientific evidence illustrating a problem is underway. It is particularly difficult in communities already ignored by the broader society due to dynamics related to race and/or class; slow environmental violence is often intertwined with the unique characteristics of marginalized segments of society. It is not impossible. Decades of agitation and mobilization in marginalized communities throughout the United States have contributed to a greater recognition of environmental inequality, but the representational challenges persist and, as Nixon notes, must often be confronted in novel ways. (Rice, 2016, p. 179)

One of the ways to alter the lens is to adopt part of the sentiment from Beamish's (2002b) *crecive* troubles and recognize that there is neither strictly "fast" or "slow" environmental violence but that they are part of a continuum of types of events, each leading to the other (Christian & Dowler, 2019). A catastrophic spill of a toxin (fast) will lead to decades of cleanup and health impacts for humans and nature (slow). A slow leak of that same toxin will lead to decades of health impacts (slow) that will start imperceptibly but then build to a tipping point where disease clusters will be found, and natural systems have been altered (fast). Both can be seen as *crecive* disasters. In other words, acute disasters can transform into slow violence and vice versa; disasters fall along a spectrum rather than existing as a dichotomy.

### *Toxicological Violence*

The study of slow toxicologic violence is a subset of slow environmental violence. It carries with it an air of menace and foreboding: these events are often a slow burn of substances that are not acute enough to cause immediate harm, but over longer periods lead to empirical morbidity and sometimes mortality. They are enough to cause measurable decreases in disability-adjusted life-years (DALYs), which might lead one to believe they would get more attention from the Industrial Complex given that a reduction in DALYs directly correlates with a decrease in overall productivity (Briggs, 2003).

To bring the true nature of the slower events to light, such as those in slow toxicological violence, requires a level of interdisciplinarity that is different from the work to understand impacts where the cause and effect of environmental violence is much more visible. Fewer resources are currently available for communities experiencing a slow toxic event and impacted individuals are often not believed. For example, in Flint, MI, residents were not believed for over 18 months about the problems with the city's water (Krings et al., 2019). While they did bring their concerns to the city council, the Emergency Manager, and media, Flint's residents were almost completely ignored for a number of reasons. Interestingly, corporations who also noticed problems were taken seriously and allowed to switch back to a cleaner water source. The head of the Michigan Department of Environmental Quality made the health concerns an issue of personal responsibility. Action was finally taken when community members organized on an increasingly larger level and brought scientists and public health experts from outside of Flint to argue their case. This exemplifies many stories of slow environmental violence: to bring the stories to bear requires toxicology, epidemiology, environmental justice, political geography,

sociology, anthropology, community planning, ecological economics, criminal justice, and many others.

In fact, these wicked problems are so nebulous and difficult to pin down that it took until 2018 for the United Nations to make its first substantive change in its noncommunicable disease (NCD) category in years to include air pollution as an environmental risk factor (United Nations & World Health Organization, 2018). While long in coming, and only including air pollution, this policy shift signaled a sea-change in global approaches to public health and toxicology, where impacts of the latter were often seen as personal failings among the impacted (Herrick, 2020). The next NCD forces a reckoning between the traditional public health sectors (largely focused on individual behavior) and those involved with environmental risk (including environmental justice issues). The public health sectors who previously have largely focused on consumptive risks (smoking, diet, etc.) and those who focus on environmental risks from exposures must now dialog with one another.

These changes were recent, however, and it often takes years before such high-level policy is put into clinical practice. Part of the reason for a disconnect may be the lack of first-person, direct accounts of the day-to-day experiences of living with slow environmental violence and its impacts on a life from the clinician and public health journals. It is noted that these are often the best sources of information on the actual impacts of a toxicological event (Davies, 2019). Harman notes, “stories have long been a means to explain what is happening to us, to think through our fears, and relate to each other as human beings” (p. 777). Through ‘slow observation’, those living in spaces subjected to slow environmental violence are bearing witness day-to-day on its impacts (Davies, 2018).

Many of the first-person stories are reserved for non-profits (e.g. American Lung Association) or special issues in newspapers/magazines where they are consumed by the masses as entertainment (Harman, 2020; Perry, 2017). When individual stories do make local-to-global headlines, however, and catch the right eye, they can have far reaching impacts (Carrington, 2020; Laville, 2020; Moss, 2018; The Guardian, 2020). Herrick (2020) has deemed this the “optics of toxicity” (p. 1042). Political inaction results from a lack of clear optics (Allen & Feigl, 2017). Individual stories are powerful and they must be treated with care, “The individual hero, the single narrative, invisible women, and the stories we dismiss all point to the ethical dangers of who has the right to tell, use, and consume stories. Too often stories are used in ways that allow audiences to eat the trauma of the story-teller” (Harman, 2020, p. 777). This ‘feasting’ on trauma undercuts the message and the violence itself.

### **Challenges to Studying Slow Environmental Violence**

While powerful, this is not to say that the framework of slow environmental violence comes without challenges. Others examining slow violence have noted its nebulous qualities, especially pertaining to methodology. Researchers have used a variety of methodologies to understand the unequal distribution of its effects on people throughout the world while recognizing the myriad impacts of slow violence and calls for action from the public. As time and place are often less well defined in slow violence, creative and unique approaches to qualitative research have been undertaken including case study, ethnography, participatory action research, and others.

Because the events being investigated are usually not well-defined temporally, the violence becomes not only an event but also an “...epistemological, representational, and analytical problem to work through...” (Vorbrugg, 2019, p. 3). There are other forms of ‘elusive’

violence and Nixon (2011a) points out that slow violence is different from others in a critical way:

...[the] explicitly temporal emphasis of slow violence allows us to keep front and center the representational challenges and imaginative dilemmas posed not just by imperceptible violence but by imperceptible change whereby violence is decoupled from its original causes by the workings of time. (p. 11)

It is particularly difficult for natural scientists to study and understand the impacts of slow violence, even ones that have made it into the public's consciousness, due to the number of confounding factors and scales involved:

Science is the dominant epistemology of modernity, but long-onset, attritional processes pose numerous problems for scientific inquiry and, in turn, norms of legal accountability. It is difficult to disentangle cause and effect when the effect lags the original cause and there is plenty of time for confounding and intervening influences to arise. It is challenging, moreover, to conduct laboratory or experimental studies replicating the long-onset dynamics at play in the real world. In turn, time often serves to indemnify polluters from accountability for their actions. (Rice, 2016, p. 178)

However, careful, considered work on slow violence is possible, even with unclear temporal limits and lack of identifiable actors. It often requires unique methodological approaches and an interdisciplinary approach. Other scholars in the fields of slow violence, including Davies, Vorbrugg, and Rice, guide my development of fully describing and analyzing a first-person experience including that of loss, continuing impacts, and recovery, from a crevice toxicologic event. This development is discussed fully in Chapter V.

## **Gaps**

From Vorbrugg (2019), there has not been as much attention paid to slow violence through qualitative lenses. The concept of slow violence was based not in fieldwork but in literary texts (Nixon, 2011a). Structural violence, a closely associated topic of study, has been informed by qualitative fieldwork but not as much attention has been paid to methodological questions that arise (Vorbrugg, 2019). In addition, the importance of personal narratives (e.g. phenomenological autoethnography) has been stated by numerous researchers (Brooks et al., 2018; Carlin & Park-Fuller, 2012; Davies, 2021; Rice, 2016). The importance of this type of research for academia was stated clearly by Eda (2015):

People who are most impacted by a particular issue must be recognized as the experts in the issue, and their knowledge must be recognized as community expertise...for marginalized communities with limited access to resources, mobilizing information through research is crucial for this process to make their voice heard and counter the dominant discourse of disasters. (p. 96)

## **Emerging Areas of Study**

Methodologies may be shaped by the study of slow violence. A slowing of observations, changing scales of time and space in research, and drawing on participatory action research all are being used to further the theoretical framework (Davies, 2018; Pain, 2019). Individuals and communities with direct experiences are best suited to speak to the ‘gradual injuries’ of slow violence (Davies, 2019, p. 411). The stories are powerful and convey much more than Big Data or other large-scale measures of time and space can provide:

They provide evidence that slow violence has a strong hold on many lives around this planet; show how it resonates with a variety of conditions, sites, and processes; and how

its effects are distributed very unequally across different subject positions and places.

(Vorbrugg, 2019, p. 450)

Ethnography is another area of research that has expanded greatly in the last couple of decades with more researchers experiencing affected communities themselves. Nevertheless, it is the stories of those impacted that are important to counteract ‘nonvisibility’. Through slow observation and careful dialogue, it is possible to represent their lived experience. Researchers should consider that “an emphasis on the invisible characteristics of pollution risks downplaying the political agency of frontline communities, and is myopic to the many mechanisms, embodiments, and formations of informal knowledge that allow communities to recognize and live with pollution” (Davies, 2019, p. 11). In the next section I will discuss the research paradigm used to frame the theoretical framework.

### **Research Paradigms**

In this section I will describe the research paradigm which guides this dissertation.

Fushimi (2021) writes that “readers often judge the quality of a qualitative research study based on their own worldview, which can be incompatible with that of the author” (p. 10). By stating my research paradigm, I am making clear my approach to the theoretical framework, research questions, methodology, and methods.

Research paradigms are tools used to frame and shape all aspects of a study, from the research questions, methodology, and methods through to the analysis and interpretation. By providing the philosophical assumptions of the research and the researcher, it identifies the lens through which others should interpret a particular study for the field (Fushimi, 2021; Hammersley, 2012; Kivunja & Kuyini, 2017; Kuhn, 1996; Mertens et al., 2008). The paradigm



also helps to establish the criteria against which the study should be evaluated, especially in the broad landscape of qualitative research (Caelli et al., 2003; Fushimi, 2021; Johnson, 2015).

### **Transformative Research Paradigm**

In navigating the various lenses that guide qualitative research, I align most closely with that of a transformative paradigm (Johnson, 2015). Jackson et al. (2018) defines the transformative paradigm as:

a research framework that centers the experiences of marginalized communities, includes analysis of power differentials that have led to marginalization, and links research findings to actions intended to mitigate disparities. (p. 1)

The transformative paradigm is included within the four major research paradigms outlined by Mackenzie and Knipe (2006): postpositivist, constructivist, transformative, and pragmatic. It is possible for slow environmental violence to be examined through each of the four major paradigms (Creswell & Creswell, 2018; Mackenzie & Knipe, 2006; Mertens, 2005; Romm, 2015). These four paradigms can be considered umbrellas that each encompass other paradigmatic terms. For example, the transformative paradigm includes: critical theory, neo-Marxist, feminist, critical race theory, Freirean, participatory, emancipatory, advocacy, grand narrative, empowerment issue oriented, change-oriented, interventionist, queer theory, race specific, and political (MacKenzie and Knipe, 2006).

A research paradigm encompasses the “philosophical assumptions that describe one’s worldview” (Mertens et al., 2008, p. 82). The paradigm lies at the heart of the intersection of the assumptions of ontology, epistemology, methodology, and axiology (Romm, 2015). The assumptions of the transformative paradigm are detailed in Table 1.

**Table 1.***Philosophical Assumptions of the Transformative Paradigm.*

	<b>Ontology</b>	<b>Epistemology</b>	<b>Methodology</b>	<b>Axiology</b>
<b>Philosophical Question</b>	What is the nature of reality?	What is the nature of knowledge? Who holds that knowledge by what means?	What is the approach and methods by which research is conducted?	What is the nature of ethical behavior?
<b>Transformative Paradigm Lens</b>	Knowledge is socially constructed but there are key structural power and privilege dynamics at play that allow some versions of reality to become the narrative conveyed over others (Mertens, 2012; Mertens, 1999, 2007; Romm, 2015).	A field and researchers should seek out varied and contrasting points of view to gain a full picture of the lived experience of the community (Mertens, 2007).	Research is conducted with input from stakeholders to ensure an authentic encapsulation of their reality, typically with a mixed methods approach (Romm, 2015).	Axiology guides the other three assumptions. It centers on a social justice agenda and recognizes “the need to redress inequalities by giving precedence, or at least equal weight, to the voice of the least advantaged groups in society” (Romm, 2015).

Before I discuss these philosophical assumptions, it is important to note that the core of the transformative paradigm, as seen in Table 1, “emanate[s] from an ethical stance that emphasizes the pursuit of social justice and the furtherance of human rights.” (Mertens, 2012, p. 256). If we, as a species, are to protect and rebuild the fabric of our ecological systems, not only do our political and economic systems need to change but social justice must also be central to the conversations (Reisch, 2002). As social justice and sustainability are intertwined, this

framework comes with research responsibilities that acknowledge power, privilege, culture, economics, and other aspects of reality (Mertens, 2007; United Nations, 2015). These responsibilities drive the methodological frameworks, data collection, and analysis of the research (Lincoln, 2013; Mertens, 2010). I discuss the inclusion of ethics and validity considerations in the Methodology section of this dissertation (Jackson et al., 2018).

Elaborating on the axiology above, Romm (2015) points out that Mertens initial work on the transformative paradigm could be made stronger by acknowledging that researchers have impacts on their research. In the process of doing research, Romm (2015) states researchers should:

engage with others in considering potential impacts, with the hope of generating justifiable impacts. Our responsibilities arise because research makes, rather than finds realities....reality statements that arguably hold (most) potential for generating action toward increased justice should be the focus of the transformative researcher. (p. 420)

In some cases, the engagement is with self and can be explored through autoethnography if the researcher is also one of those impacted. This is discussed further in Chapter III.

Mertens (2005) stressed the importance of the researcher's role in challenging the traditional power dynamics in society and inequities that result, while recognizing that it is an ongoing, non-linear process. This study will focus on a normative inquiry as defined by Fushimi (2021), rather than explorative, explanative, or interpretative. In normative inquiry, researchers:

believe that their studies have a political purpose, such as the eradication of social inequalities and discrimination. Accordingly, these researchers: (a) try to construct a dialogical relationship with research participants, (b) view the participants as players in a social phenomenon, (c) encourage practitioners to be

critically reflective to their common sense, and (d) seek to adopt a more critically protectable idea (Schwandt, 1996). These researchers evaluate such studies based on the ability to transform institutions or to raise consciousness on the issues in society. (p. 12-13)

As above, the participants and players may be the researchers themselves. By utilizing autoethnography and similar methods, researchers who have experienced slow violence can engage in a dialogical, critically reflective relationship with self as both participant and researcher. They are embedded in a social phenomenon as a participant and as a researcher are searching for a 'critically protectable idea'. This is discussed further in Chapter III.

Although critiqued for its similarities to the preexisting Critical Systemic Thinking approach by Flood and Jackson (1991) and Midgley (1996), Merten's transformative paradigm is well-suited for the purposes of this study because of its critical awareness (of assumptions and conditions), emancipation (from inequitable power dynamics), and methodology (including a variety of appropriate research methods) (Romm, 2015). The challenges around community ownership is described in my section in Chapter I on my role in and outside of the community of focus.

### **Chapter Summary**

Slow environmental violence is a more recent, but important area of study, branching from structural violence. It can be utilized to understand those types of disasters which have incremental onset, ambiguous boundaries, and whose impacts are nonvisible. This chapter established slow environmental violence as the theoretical framework for the study and the transformative research paradigm as the lens to focus that theoretical framework. Included in the

chapter are sections on benefits and challenges in application, gaps in the literature, and emerging areas of study. The next chapter discusses the methodology used for the study: phenomenological autoethnography.

## CHAPTER III: METHODOLOGY

### Introduction

This research offers new understandings of slow violence through a phenomenological autoethnographic approach that centers personal reflection, reflexive dialogue, and artifacts. I experienced an anthropogenic toxicological disaster in my community in 2014. One of the primary contributions of this research is a first-person account of living and learning through, and recovering from, this type of crisis. My primary methodological framework is that of phenomenological autoethnography (Collins, 2015; Southard, 2010) because, as outlined in the following sections, “Autoethnography is an approach to research and writing that seeks to describe and systematically analyze (*graphy*) personal experience (*auto*) in order to understand cultural experience (*ethno*)” (Ellis et al., 2011, p. 1).

Autoethnography can be transformative as it both requires vulnerability and fosters empathy (Custer, 2014). As my experience is highly individual, but within a complex cultural and socio-political construct, phenomenological autoethnography allows for an exploration of an event and its personal impacts while also examining the root causation for many of those experiences (Ellis & Bochner, 2000; Gruppeta, 2004; Pitard, 2017). Specifically, analytic phenomenological autoethnography, is an approach within the methodology, where:

the researcher is (1) a full member in the research group or setting, (2) visible as such a member in the researcher's published texts, and (3) committed to an analytic research agenda focused on improving theoretical understandings of broader social phenomena.

(Anderson, 2006, p. 373)

Researchers filtering their study through a transformational lens seek to partner with those in marginalized communities in order to challenge the status quo and change the sociopolitical

systems that oppress people and damage ecosystems (Mertens et al., 2009). Following Anderson (2006), I am a full member of the research, now visible in text as such, and am committed to understanding my own experiences in a larger context to contribute to academia and beyond with other, similar wicked problems.

This analytic phenomenological autoethnography will allow for an in-depth critical analysis of my experience: a first-hand account of the very real physical, emotional, economic, and relationship hardships I experienced as a result of toxicological slow violence; the socioeconomic, cultural, political, legal, and ethical barriers I faced; and the privilege, support, and skillset available to me that allowed my family to psychologically persevere. An overview of the approach, including as it pertains to toxicological research, ethical and validity concerns, as well as my considerations of those concerns are detailed below.

### **Methodological Framework**

Below I detail my methodological approach to phenomenological autoethnography, including how it pertains to toxicological research, ethical and validity concerns, and my consideration of those concerns. In other environmental violence studies, the effects have been examined and communicated through interdisciplinary lenses from second or third-person perspectives (Davies, 2018, 2019; Vorbrugg, 2019). First-person lived experiences are largely missing from the literature (Davies, 2019). However, as with other areas of qualitative research, the narrative and analysis of one's own lived experience is a powerful tool to share the phenomena from an 'insiders' perspective (Seeger & Sellnow, 2016). In addition, addressing gaps in the literature through autoethnography has been used by researchers in other fields (Dumbleton, 2013; Murray et al., 2012; Wackers, 2016; Wall, 2006, 2008). For example, in Aguirre and Duncan (2013), the lived experiences of a disabled student and his instructor

experiencing the accommodations process in hybrid and online courses is described through collaborative phenomenological autoethnography. By combining first-person, analytical and descriptive writing with artifacts, this article paved the way for my own research. “The first person perspective creates a unique window into an individual’s experiences, cognitions, and emotional state...Others who have not had these experiences can come to understand and learn from the experiences of others” (Seeger & Sellnow, 2016, p. 51). I have also included reflexive dialogue that adds to the phenomenological autoethnography by providing another layer of evidence.

A phenomenological autoethnographic methodological approach suits both my research questions and intended benefits. It is a unique way to critically explore my own experience of slow environmental violence. Pairing phenomenology and autoethnography together as a methodology is particularly powerful in this case as my experiences of slow environmental violence are rooted in the cultural norms and various identities I hold within my various areas of life. I explored how these norms, identities, and the structures I exist within impacted my experience of a traumatic phenomenon.

Phenomenological autoethnography is an interactive, dialogic approach where the participant is the observer with cultural and identity lenses (autoethnography) and analyzing phenomena as lived experiences (phenomenology):

In this form of research, the primary focus is upon the researcher’s lived experience of a phenomenon or phenomena rather than upon her or his cultural or subcultural location within a socio-cultural context, although clearly these are not mutually exclusive categories. (Allen-Collinson, 2013, p. 293)



The process of phenomenological autoethnography is well-defined in Rawlins (2017). As they state:

In phenomenological autoethnography, or autophenomenography, we work to present variations of experience to illustrate that nothing and no one is monolithic. My experience of my Self is irreducibly intersubjective but also contextualized in a specific time–space....Accordingly, I intentionally abstain from drawing hard and fast conclusions based on my fleeting interactions. Phenomenological variations appreciate that everyone encounters things differently based on their own lived experiences. These dissimilarities discipline and guide my detailed descriptions. These critical variations—how things seem (to me) and how they could be/seem otherwise...necessarily play a central role in representation. (p. 104)

The experiences of my phenomenological autoethnography are those of me and my family but events and structures that lead to toxicological slow environmental violence are not unique to me or my community. Marginalized communities are those most impacted by slow violence. While I am not able to speak directly to the experiences of others through my methodological approach, I can tell the story of my own experience, how it impacted me, how those impacts had reverberating effects, and therefore, how they may speak to possible commonalities for others. At its heart, autoethnography is “a form of self-narrative that places the self within a social context” (Reed-Danahay, 1997, p. 9). It is a newer methodological framework that arose out of the Crisis of Representation in the 1980s (Butz & Besio, 2009). Social and behavioral academics such as Butz and Besio (2009) began to acknowledge that marginalized groups were being spoken about and for by an omnipotent author; the subjects’ actual voices were silenced by research conventions:

In particular, by absenting themselves as subjects from their writing, while simultaneously claiming the unquestionable authority of ‘having been there’, researchers were able to avoid the partiality and positionality of their knowledge claims, thereby protecting the illusion that their objects of study were unrelated to the subjectivity that produced knowledge about them. (p. 1662)

Phenomenological autoethnography is particularly well-suited to the present line of inquiry because it acknowledges that the perspective of the researcher cannot be ignored (Wall, 2008). As fits with the transformative paradigm, in embracing a critical self-narrative, phenomenological autoethnography recognizes that accounting for a variety of perspectives is important, the assumptions and cultural context of the researcher should be explicit, and implications and benefits of a certain area of research on others be acknowledged fully to address power, privilege, and marginalization (Ackerman, 2020; Carey, 2018; Kravia & Pagliano, 2015; Priddis, 2015; Romm, 2018). Revisiting Schwandt’s (1996) criteria for a normative inquiry, I have noted how each aligns with phenomenological autoethnography:

1. Researchers construct a dialogical relationship with participants
  - I was the primary participant in this phenomenon;
  - I kept records throughout the process and regularly dialogued with myself about what was occurring;
  - I also engaged in reflexive dialogue with others who were present at the time, including a colleague/friend and my husband, Dan (name has not been changed), both during the phenomenon and for this dissertation.
2. Participants are viewed as players in a social phenomenon

- As the phenomenon affected me physically, emotionally, financially, and legally, I was a player in the events of April 3<sup>rd</sup>, 2014 to present.

3. Practitioners are critically reflective to their common sense

- I have strived to be critically reflective in my writing to acknowledge both the impacts on myself and the community, as well as the privilege I utilized throughout this process.

4. Adopt a more critically protectable idea

- I have been able to write and describe first-person impacts of slow environmental violence that have been missing from the literature.

By not concealing my own voice and what I have learned, I am able to look more holistically at the slow violence experiences of, and impacts on, others and provide opportunities for others to bring their own stories forward and tell them in their own voice. In other words, I have done,

meaningful, accessible, and evocative research grounded in personal experience, research that would sensitize readers to issues of identity politics, to experiences shrouded in silence, and to forms of representation that deepen our capacity to empathize with people who are different from us. (Ellis et al., 2011, p. 2)

Holman Jones (2005) describes the narrative of autoethnography as “critical intervention in social, political, and cultural life” and that the process is “a call to disrupt, produce, and imagine a breakthrough in – and not a respite from – the way things are and perhaps should be” (p. 763). Autoethnography is “looking at the world from a specific, perspectival, and limited vantage point” that can “tell, teach, and put people in motion...a radical demographic politics – a

politics committed to creating space for dialogue and debate that instigates and shapes social change” (Holman Jones, 2005, p. 763).

At its heart, my process of an interwoven, autoethnographic account is social and environmental justice work, supported by the transformative paradigm (de Onís & Pezzullo, 2017; Engstrom & Powers, 2021). By deconstructing the experience; breaking down the learning process, emotional impacts, and eventual recovery; and writing/presenting my analysis to others, my work will ideally help individuals and communities in the future who are at risk of something similar in their own neighborhood or region.

## **Research Protocol**

### **Methods**

*“Writing is a method of discovery” (Richardson, 2001, p. 35).*

Following my methodological framework, my methods included personal narrative and external data from my own experience, forming a layered phenomenological autoethnography (Ellis et al., 2011). The phenomenological autoethnography process is inherently reflexive, with the difficult process of determining the role that education, culture, gender, socioeconomic status, background, value systems, and political beliefs played in my learning process during the toxicological crisis I experienced (Creswell & Creswell, 2018). Reflexive dialogue around, and materials from, that period helped to place the events in time and space, but also give context to the narrative. An IRB was approved and I completed the Collaborative Institutional Training Initiative (CITI) requirements (Appendix A).

I have framed my phenomenological autoethnography into a series of five vignettes: Home, Self, Nature, Community, and Justice. A loose structure of these vignettes was conceptualized *a priori* but were restructured and supported through analysis. Other

phenomenological autoethnographers have used vignettes in their research and I have modeled this practice (Bunde-Birouste et al., 2019; Pitard, 2019). These categories have been developed based on similar categorization within disaster management research. For example, in a review by Seneviratne et al., (2011), the main factors leading to successful disaster management were technological, social, environmental, legal, economic, operational, institutional, and political. In my own experience, I was left to manage the disaster. Therefore, I have adapted these categories to my own methodological approach. Each section includes an analysis of my own experience through critical phenomenological autoethnography, similar to other work done on traumatic experiences or environmental justice (Ackerman, 2020; Cordova, 2018; Martin, 2020; Matthews, 2017).

### **Research Questions**

My research is guided by this driving questions:

1. How do my lived experiences reflect and diverge from Nixon's (2011a) theoretical concept of slow environmental violence, including incremental onset, ambiguous boundaries, and nonvisibility?

A related area of inquiry includes:

2. How did my lived experience inform my understanding of how the sociopolitical, cultural, historical, and economic forces led to this event and/or its impacts?

### **Data Collection and Analysis**

#### **Writing Exercises**

Reflective writing exercises were my primary methodology and analytical tool (Chang, 2009; Pennebaker & Smyth, 2016; Richardson, 2001; Richardson & St. Pierre, 2005). "Writing is always done in specific, local, and historical contexts" (Richardson, 2001, p. 36). While I did

not journal during the time of the incident, nor did I journal during the legal proceedings, some of the documents outlined in the Materials Analysis below captured my thoughts at the time through emails and legal correspondence.

I used a variety of writing exercises, in both descriptive-realist and analytical-interpretive writing styles, to reflect on individual trauma over the four years that collectively built into a form of slow violence (Abercrombie, 2002; Chang, 2009, 2013; Neil, 2017; Pennebaker, 2004; Pennebaker & Evans, 2014; Pennebaker & Smyth, 2016; Rico, 1991; Zimmermann, 2002). Described in more detail below, these two types of writing exercises were then combined with external data to form the phenomenological autoethnography.

### *Descriptive-Realistic Writing*

Descriptive-Realistic writing depicts “places, people, experiences, and events as ‘accurately’ as possible with minimal character judgment and evaluation” (Chang, 2009, p. 143). Through this type of writing, the phenomena and surrounding events are described and baseline information laid out for the reader. One preparatory writing exercise for this section included developing a chronological list of major events or experiences, including dates and brief accounts, and identifying key moments (Chang, 2009). Freewriting accounts of events were also used to focus on the emotions and feelings surrounding the phenomena (Pennebaker & Smyth, 2016). These freewriting sessions focused on the subtopics of the phenomenological autoethnography.

Most of this story is told through this form of writing; my narrative largely focuses on the events, my reactions, and their impacts. However, it is not enough to just tell the story. The phenomena must be interpreted through critical reflection using an additional style of autoethnographic writing known as analytical-interpretive.

### *Analytical-Interpretive Writing*

Analytical-Interpretive writing identifies “essential features transcending particular details” where these features “are highlighted and relationships among data fragments are explained” (Chang, 2009, p. 146). These sections are woven throughout the descriptive-realistic writing sections to give meaning and context to the events, reactions, and impacts. Preparatory writing exercises for this section included developing and analyzing a self-constructed culture-gram (Chang, 2009). A culture-gram is a visual representation of implicit and explicit “life experiences, involvements, familiar groups, passions, and cultural competence” as well as primary self-identifiers and identities (Chang, 2009, p. 99). It requires “self-reflection, self-evaluation, and self-analysis, which blend data collection with data analysis and interpretation” (Chang, 2009, p. 100). Another exercise that was incorporated was a self-interview involving reflexive questions and answers about socio-cultural aspects of the phenomenon (Neil, 2017). In Neil, the author asked themselves a series of questions to elucidate how the tools they used helped to “develop or gain insight into my reflexivity and artistic practice” (2017, p. 47). In my questions, I asked myself questions such as, “why do I feel that justice was not served?”, “how did losing my home and belonging change my perspective?”, and “what lasting impacts did the experience have on me and my relationships?”. The answer to these questions and more helped to guide the development of my phenomenological autoethnography.

### **External Data**

Information and data from external sources strengthen an autoethnography by providing triangulation points and provide a measure of one’s subjectivity versus objectivity as the past and present are examined (Chang, 2009). External sources may consist of interviews or dialogue,

artifacts, and literature. In my dissertation, I used two external sources in addition to my critical narrative: reflexive dialogue (i.e., informal interview) and artifacts.

### *Reflexive Dialogue*

Interviews with others in autoethnography “provide external data that give contextual information to confirm, complement, or reject introspectively generated data” (Chang, 2009, p. 104). I engaged in reflexive dialogue, a form of individual, semi-unstructured, informal, direct interview conducted face-to-face or virtually (dependent on pandemic conditions and the comfort of participants) with family and colleagues who were around me during my own crisis (Adams, 2016; Adams & Manning, 2015; Chang, 2009; Etherington, 2007; Roulston, 2010). Chang (2009) notes interview is used in autoethnography to “stimulate your memory, to fill in gaps in information, to gather new information about you and other relevant topics, to validate your personal data, and to gain others’ perspectives on you” (p. 106). While objectivity may not be possible, by conferring with others it is possible to fill out the autoethnographic perspective and “aim for transparency...and resist the temptation to produce authoritative accounts or interpretations that generalize” (Lapadat, 2017, p. 592-593). I found this all to be true and that it may be most important to recognize that:

We live in communities connected to family members, friends, colleagues, and others with whom we interact in our daily lives. Autoethnographic stories of our experiences, therefore, are not wholly our own; they implicate relational others in our lives. (Lapadat, 2017, p. 593)

Autoethnographies (phenomenological or otherwise) are generally written in first-person, and the authors are known, bringing anyone from their intimate and public circles into the story



with them. Reflexive, continuous dialogue also helps to address some of the representation ethics presented through phenomenological autoethnography as Lapadat (2017) states:

Because autoethnographers typically are in ongoing relationships with the mentioned others, they also must wrestle with competing desires to present an authentic interpretative account, protect the well-being of the others, maintain their ongoing relationships, and not stigmatize themselves. (p. 594)

I dialogued with those whom I most engaged with during 2014-2018 as to their memories, thoughts, and insight into my lived experiences. Roulston (2010) notes this type of “phenomenological interview is relatively unstructured, open-ended, and may be guided by only one or two interview questions” (p. 17). Dialogue can help jog personal memories: bringing questions and events to the forefront that were pushed to the back of one’s mind. These conversations, which ranged from 45 minutes to 4 hours over multiple sessions, led me down new pathways of understanding how the events of 2014-2018 shaped the areas I examined. In addition, these conversations, and the writing exercises set forth by Chang (2009), assisted me in critically identifying the ways in which my privilege shaped my experiences where others may not have had the same advantages.

#### *Criteria and Methods for Dialogue*

Criteria for choosing participants to dialogue with included 1) that they are familiar with the events of 2014-2018 and 2) that they are willing to be engaged in constructive and reflective conversations. Due to the legal process that began on the second day of the events, I was not able to discuss what was occurring with many people. Many of the families who lived in my neighborhood at the time of the fire were renters and have since moved away. I did not know their last names; interviews in this instance were nearly impossible.

My potential participant pool to dialogue with was small, but there are those who fit the criteria. In addition, there are several within the pool who work in academia but are outside of the fields of social and natural sciences that I work in and am studying. From there, a few people chosen to be in the pool were later not comfortable being part of a formal record and chose not to participate.

Based on these criteria, my primary participant was my husband, Dan Barrett. He has been present from the morning of April 3<sup>rd</sup>, 2014, all the way through final legal mediations and beyond (Bochner & Ellis, 2016; Ellis, 2001, 2007; Graham, 2015). This type of reflexive dialogue with loved ones is established in the autoethnography literature. Regarding this Dissertation, he has been supportive of this critical nature of the work and dialoguing about my, and our, experience, and allowed our conversations to flow where they took us (Bochner & Ellis, 2012; Ellis, 2009; Ellis et al., 2018). Prior to this Dissertation, we spent hundreds of hours of conversations regarding the phenomenon over the years. However, for this work, only the conversations approved by the IRB and recorded were used. In all, we spoke for 4 hours over three individual conversations.

There are several points of relational ethics that have been considered. Dan is already an intimate part of my story, but it was important to consider these as we went into more formal conversations for this dissertation. In addition, autoethnography proponents assert that in order to engage fully to the story, it is important to acknowledge the others that are part of the story and to engage and maintain dialogue with them (Bergum & Dossetor, 2005; Ellis, 2007; Slattery & Rapp, 2002). As I am writing this work, the ethical, reflexive research lens would be to include his voice via our dialogue. Similarly, relational ethics were considered with my

colleague/mentor/friend in our interview given that we continue to work and interact with each other daily.

Following in the tradition of Ellis and Bochner (2006), I used an open dialogue protocol for each conversation. This entailed using basic prompting questions to begin the conversation and stay within the parameters of the phenomenon. However, once the dialogue began and the initial prompts asked, there were no predetermined topics that must be covered. This approach allowed a free flow of conversation regarding the phenomenon, letting the memories take us back to the events as they came to mind.

All dialogues were recorded on a tablet that is password protected. Dan and I met at scheduled times but also spoke on occasion more casually if the topic arose. When that happened, I would ask to pause the conversation so I could record. We spoke for a total of 4.5 hours and 105 pages of transcripts were gleaned from our conversations.

For my colleague/mentor/friend, the reflexive dialogue was conducted and recorded on Zoom for social distancing purposes over the course of 45 minutes. This recording is saved in the cloud on a two-factor authenticated account. Twenty-two pages of transcripts were collected (Ellis, 1999; Giles, 2010; Klinker & Todd, 2015; Walker, 2012). Recordings have been stored on a password protected cloud drive. Each recording was transcribed with Otter.ai and the transcripts used for thematic analysis (Bokhove & Downey, 2018; Hafferty, 2020; Serdencuk, 2019).

### *Ethical Considerations with Reflexive Dialogue*

The primary ethical issues in autoethnography, phenomenological or otherwise, are the impacts on the people drawn into the story by their relationship to the researcher, the sensitive issues being discussed, and the future of relationships between researcher and related others

(Etherington, 2007; Gibbs, 2018; Sikes, 2015). There are no simple answers to these ethical questions but transparency with others that may be in the story is paramount (Ellis, 2007; Etherington, 2004, 2007). The ethical considerations are dynamic, relational, moral, mindful, and include trustworthiness, caring, and an eye towards the well-being of the researcher and the other (Adams, 2008; Douglas & Carless, 2013; Ellis, 2007; Etherington, 2007; Guillemin & Gillam, 2004). One of the practices of Tolich's (2010) guidelines for ethical autoethnography research are to document consent, a process already inherent to the IRB process at AUNE (Gibbs, 2018). In addition, as mentioned, I have practiced process consent for individuals reflected in the narrative and given careful consideration to confidentiality (Ellis, 2007). For the corporations and other entities already in the legal record, their presence in the story has already been documented. Their consent will not be sought but care will be taken to reflect the facts of the legal cases as they are documented in materials.

Because I interviewed and discussed experiences with loved ones, while they fully supported my work, I made sure to take care of their contributions and personal experiences. Using the guidelines provided by Tolich (2010) and Tullis (2013), I considered consent, vulnerability, and consultation with all of my dialogue partners. Consent means discussing the inclusion of individuals with them before publication (Gibbs, 2018). In cases where I could not get consent, identification has been redacted or generalized (e.g. "my psychiatrist" instead of my actual doctor's name).

A second practice of Tolich (2010) addresses vulnerability (Gibbs, 2018). Vulnerability is recognizing that all participants are at risk of harm and that by writing the autoethnography, the author should aim to do no harm. There are individual considerations as I have interviewed and discussed co-experiences with loved ones and colleagues (Ballard & Ballard, 2011; Bochner

& Ellis, 2016; Danzak et al., 2021; Ellis et al., 2018). It is important to recognize that the autoethnography is a permanent record (Sikes, 2015; Tolich, 2010). To anticipate future ethical concerns, Ellis (2001) states “You have to live the experience of doing research on the other, think it through, improvise, write and re-write, anticipate and feel its consequences” (p. 615). While they support my work, care was taken with their contributions and own personal experiences. While not a goal of this phenomenological autoethnography, a side benefit may be that the work is psychologically and emotionally cathartic if done carefully and with respect to self and others (Abercrombie, 2002; Pennebaker & Evans, 2014; Pennebaker & Smyth, 2016). While the process of writing the autoethnography was painful due to revisiting memories, some of which had been forgotten, it did no further harm than the initial trauma according to my participants.

Consultation is the final group of recommendations by Tolich (2010), the recognition that all those in the autoethnography may someday read it. Often the author shares the work with those who are included in the phenomenological autoethnography before publication for their feedback. In this recommendation, they refer to Medford (2006) in that no autoethnography should be published that could not, or would not, be shared with all those who are represented in it (Tolich, 2010). This also helps avoid “slippage”, where writers of autoethnography “purposefully alter/omit a relevant experience because the story that would be told about their character is not desirable” (Medford, 2006, p. 7). Whether inadvertent or intended, slippage can have lasting effects on others in the story. Rhetorically asking about offense, and who would take it, is a sound tool to identify potential harm and ethical problems. I am comfortable with what has been written and have shared with my participants.

In the area of disaster research, phenomenological autoethnographic accounts can be beneficial for community resilience and environmental readiness research. It can also be psychologically and emotionally cathartic if done carefully and with respect to self and others. Each participant was told of the study, its intent, and had no obligation to participate (Appendix B). Dialogue sessions were conducted with informed consent and no individuals were obligated, coerced, or paid to participate. Initial conversation prompts have been included (Appendix C). These prompts include introductory, as well as place and time-setting, questions to jog the memory of participants. I practiced process consent with participants to make sure participants were still willing to participate throughout the conversation. The conversations could have ended at any time. I assumed everyone in my narrative may read it; I have shared what I wrote with each consenting participant before publishing (Ellis, 2007).

My husband, the primary source of the reflexive dialogue, was not treated confidentially in the dissertation (Ellis et al., 2018; Ellis & Bochner, 2006). He has already been identified with the event and the legal cases in the media, in the legal record, and is fully present in the autoethnography as he was by my side throughout everything. His consent form reflected this relatively unique situation. A primary concern regarding the ethics of families and autoethnography is the alteration of the relationship due to the writing or discussion of painful experiences.

For some, the fragile nature of a relationship means a relationship could be irrevocably damaged by sharing (e.g., Kiesinger, 2002), while at other times, relationships may be cemented and we feel greater communion and comradeship. (Douglas & Carless, 2013, p. 98)

Considering this, Dan and I have already lived this experience side-by-side and discussed the nature of these events extensively in the past. While each of us has coped in our own way, our feelings and thoughts on nearly everything are shared. We are both fully engaged partners, caregivers, and confidants in our marriage. Writing phenomenological autoethnography did not change that. Indeed, with cathartic outcomes often noted by autoethnographers, my observation is that it has drawn us a bit closer (Abercrombie, 2002; Pennebaker, 2004).

My colleague was treated confidentially in the dissertation and identifying characteristics have been concealed. Due to the small size of our institution, however, it may be possible to identify them in the future. My colleague has spoken to my attorney in the past on the record. However, they were not deposed by the defendants and so are not in court records. In addition to reflexive dialogue as external data, one other key method for this research is materials analysis of artifacts.

### *Artifacts*

“Artifacts are material manifestations of culture that illuminate their historical contexts” (Chang, 2009, p. 107). Fortunately, I was able to use a plethora of the documentation from the timeframe being studied that supported the writing exercises and dialogue of the phenomenological autoethnography (Creswell & Creswell, 2018). There are four sources of primary materials that I used: legal correspondence in the form of emails and letters, legal and other documents in the public record (including depositions, FOIA requests, docket information, court records, insurance documentation, transcripts, and news articles), photographs (either from others with permission or by me), and videos (available on YouTube). I use the word “materials” to note that, as Salmons (2016) points out, there is a diverse array of visual, audio, and written objects available to be analyzed in the 21<sup>st</sup> century.

Official documents can be validating and are built and authored by social and political institutions (Chang, 2009). In addition, Chang (2009) notes, “visual data complement textual data and sometimes superseded the benefit of textual data because visual data make long-term impressions on viewers” (p. 109) My materials are contemporary and emergent (Salmons, 2016). I was already in possession of hard copies of nearly all written, audiovisual, and photographic materials from the legal cases, with electronic backups for safekeeping. I obtained the records of any legal proceedings, city/state official documents, news articles, photos/videos, and transcripts that I did not already have.

### *Materials Analysis*

Advantages to using material analysis to support phenomenological autoethnography include, among others, a method for data triangulation, bias reduction, incorporation of different points of view, insight into organization and culture, implicit narratives and assumptions, limitations and boundaries of perspective, information access and utilization, and identification of sociopolitical networks (Bretschneider et al., 2017; Grant, 2018; Markham, 2020; Prior, 2003). Materials analysis is limited in that it is often not a full record of a phenomena. Some things are not recorded as they are deemed unimportant, a legal non-starter, or are better stated in writing “off the record”. However, when paired with the other methods above, they can be a valuable addition to a phenomenological autoethnography in filling out the collective picture of the slow violence that occurred by as much what is not documented as what is.

The materials were approached with a critical discourse analysis (Jupp & Norris, 1993; Tight, 2019). The focus on discourse analysis is on the “literary or linguistic element in talk or text” (Tight, 2019, p. 8). Tonkiss (2004) is more specific,



Discourse can refer to a single utterance or speech act (from a fragment of talk to a private conversation to a political speech) or to a systematic ordering of language involving certain rules, terminology and conventions (such as legal or medical discourse). (p. 478)

‘Talk’, ‘text’, and ‘linguistic’ in materials do not need to solely be the spoken or written word but may be in the form of visual representations of ideas as well (Chonka, 2016; Choudhury & Emdad Haque, 2018; Goddard & Carey, 2017). In all cases, “...the analyst is concerned with examining the way that specific forms of text and speech produce their versions of a social issue, problem, event or context” (Tonkiss, 2004, p. 408). In critical discourse analysis it is especially important to “...look at the silences or gaps, to make conjectures about alternative accounts which are excluded by omission, as well as those which are countered by rhetoric” (Tonkiss, 2004, p. 418). In many places, these omissions may tell the researcher more than what has been made explicit.

### **Critiques of Autoethnography**

#### **Validity Concerns**

Validity concerns (reproducibility, generalizability, accuracy, etc.) originate in positivist frameworks (Denzin, 2013). The belief in my work and the power of both my story and others can help me resist “the dominant conventions...assimilating, and...reinforcing practices and assumptions that relegate nonconforming texts [such as autoethnography] to the margin” (Lionnet, 1989, p. 326). Many of the concerns around validity of phenomenological autoethnography have to do with a perceived “self-indulgence” of the researcher (Allen-Collinson & Hockey, 2004; Delamont, 2009; Sparkes, 2002). However, the true nature of autoethnography is to use the researcher’s lived experience as a vehicle to “illuminate wider

cultural or subcultural aspects” including the roles of power, privilege, and education in areas of social and environmental justice (Allen-Collinson & Hockey, 2004, p. 178).

Richardson (2001) notes,

*People who write are always writing about their lives, even when they disguise this through the omniscient voice of science or scholarship. No writing is untainted by human hands, pure, objective, ‘innocent.’ The old idea of a strict bifurcation between ‘objective’ and ‘subjective’ – between the ‘head’ and the ‘heart’ – does not map onto the actual practices through production of knowledge, or knowledge about how knowledge is produced. (p. 34)*

Mine is the voice of a scholar who is both inside and outside a community impacted by a toxicological event. This duality provides a unique voice to communities experiencing these traumas (Poerwandari, 2021). As Tillmann-Healy (1996) writes about her autoethnography on bodily self-image, food, and bulimia,

*I write from an emotional first-person stance that high-lights my multiple interpretive positions. Physicians and therapists keep readers at a distance. I invite you to come close and experience this world yourself. (p. 80)*

There are also concerns in the literature about self-representation. For example, a writer who covers up portions of the story that may reflect unfavorably on them or bias in analysis and conclusions (Poerwandari, 2021). However, nearly all my personal life was put out for public consumption in our 4-year legal battle, including my counseling and psychological records (Butz & Besio, 2009). In addition to analyzing my own experiences, because the tire fire was bigger than myself and my family, I have also explored what was happening in a larger sense in the community through structures during that time (Gruppetta, 2004; Pitard, 2017).

## Authenticity Concerns

Concerns regarding authenticity of phenomenological autoethnography have traditionally been different than other areas of qualitative study but are like validity concerns. As with any methodology, authenticity is paramount. The primary question that arises for any type of autoethnography is: can it be trusted given that researchers do not approach the material from a “neutral, impersonal, and objective stance”? (Ellis et al., 2011, p. 1). In autoethnography, reliability relates directly to credibility of the author. In other words, does it appear that the author has had those experiences given the evidence? Validity in autoethnography correlates with coherence (does the story make sense as told?), usefulness (does it help readers understand a new or different perspective?), and believability (is what was represented likely to be true?). Finally, transferability speaks to the process of “readers as they determine if a story speaks to them about their experience or about the lives of others they know” (Ellis et al., 2010, p. 10).

Measures of authenticity and trustworthiness of qualitative data were established by Lincoln and Guba (1985) and include such ideas as credibility, dependability, and transferability. Because the researcher is also the main participant in autoethnography, some have argued that these measures are unachievable unless they include a strictly analytical approach. However, as Wall (2008) has noted, the information being collected is the same, whether the participant was interviewed by another party or wrote it themselves.

Other scholars stress that authenticity measures used by positivists, such as a pure, reliable and accurate representation of reality, should not be used to judge those under constructivist, transformative, or pragmatic paradigms (Gibbs, 2018; Jensen-Hart & Williams, 2010; Varga & Guignon, 2020). Ellis et al. (2011) note, “different kinds of people possess different assumptions about the world—a multitude of ways of speaking, writing, valuing and

believing—and that conventional ways of doing and thinking about research were narrow, limiting, and parochial” (p. 2).

Instead, authenticity and trustworthiness can be obtained through multiple measures (Lincoln & Guba, 1985). These may include layering multiple data sources, checking in with others familiar with events, evoking ‘thick descriptions’, following ethical norms and protocols, setting clear parameters for the research and analysis, and identifying clear research questions (Chang, 2016; Ellis et al., 2011; Forber-Pratt, 2015; Gibbs, 2018; Shenton, 2004). From Ellis et al. (2011),

Autoethnographers must not only use their methodological tools and research literature to analyze experience, but also must consider ways others may experience similar epiphanies; they must use personal experience to illustrate facets of cultural experience, and, in so doing, make characteristics of a culture familiar for insiders and outsiders. (p. 4)

It has been my primary goal to capture my narrative in a phenomenological autoethnography of what occurred to me and my community, before, during, and after the event; to tell my story and the larger roles that politics, government, and public health played in the decision-making and legal process. My research uses materials analysis as a triangulation on dates, sequences of events, and aspects of the systems I am examining. Most stakeholders in my communities from that time cannot be found or were not willing to speak. I, as the phenomenological autoethnographer, must be careful to not let my own experience cloud a critical interpretation of an event or document but it cannot be ignored that I experienced this event on the ground. In addition, through my legal proceedings, I collected a great deal of documentation on all aspects of the event, including those that would otherwise be difficult to

obtain. Writing about this event, impacts, and outcomes may illuminate for others what would otherwise never have been told.

### **Chapter Summary**

This study's methodology consists of descriptive-realistic and analytic-interpretive phenomenological autoethnography, allowing for an in-depth critical analysis of my experience of a tire fire and subsequent events from April 3rd, 2014 to 2018. Data collected include a first-hand account through a series of five vignettes, including narrative, reflexive dialogue, and artifacts. Validity, authenticity, and ethical concerns were discussed. The following chapter includes my results through phenomenological autoethnography.

## CHAPTER IV: A PHENOMENOLOGICAL AUTOETHNOGRAPHY OF A TOXICOLOGICAL DISASTER

The smell: acrid...painful...sharp...chemical. It wormed its way into the back of our throats, our olfactory bulbs, and the deep memory centers of our brains. On that early April morning in Connecticut, the pungent air and all that it hid, emanating from the fire in the warehouse mere feet away, burrowed deeper and deeper...easily slipping through closed windows and doors, plaster and shingles, bursting its way into our home and lives. The toxins produced, and the denial by them of those in power, permeated everything from that day forward.

### Home

*Attritional catastrophes that overspill clear boundaries in time and space are marked above all by displacements—temporal, geographical, rhetorical, and technological displacements that simplify violence and underestimate, in advance and in retrospect, the human and environmental costs.* (Nixon, 2011a, p. 7)

In this section, I describe the experience of losing a physical place to live and a sense of home. I also document the unusual nature of leaving behind all personal items due to contamination. In addition, I detail the myriad ways that a toxic disaster causes financial hardship.

Home is an idea. It is a feeling. The house and its contents were my home before I met Dan and continued to be after we began dating. It was the first property I purchased, and I did it all on my own...something I was very proud of. It was particularly painful that all my hard work was completely lost through the thoughtlessness of others. It is an odd feeling walking away from a home under circumstances beyond your control.

Prior to the fire, I had put many hours and a good deal of money into keeping the property as a home. It was a colonial built in 1860 and needed work but, up until that point, it was mine and I was proud of it. I had established native gardens for pollinators, planted trees, regularly cleaned the property of litter, and made sure that my dogs had an outdoor fenced space in which to run (Figure 7).

**Figure 7**

*The southeast corner of my house at 94 Albert St, summer 2016 © Tara Jo Holmberg*



On the morning of April 3, 2014, everything changed. I woke up to an acrid smell that stuck in the back of my throat. Dan had been in the shower, and I asked him if he could smell it too. We did some investigating in the house before looking out the window from the second floor (Figure 8). It was then we saw the smoke beginning to seep out of the soffits of the warehouse next door and saw the firetrucks staging in front of our house.

**Figure 8**

*Our first view of the fire from an upstairs window, April 3, 2014 © Tara Jo Holmberg*



After sheltering in place for an hour, we were told we had five minutes to gather what we could before we were being evacuated. There was a moment of triage: what to take and what to leave. There was a clear chance the house could burn if sparks blew over the driveway, so the five minutes was really a time of tunnel vision. Tasks were divided up and there was little communication. After we packed two bags each with a change of clothes, laptops, wallets, my medications, and our dog, Ani's, food, we were ushered out the door without a great deal of time to consider what was being left behind (Figure 9).



**Figure 9**

*The view from our car as we evacuated one hour after the beginning of the tire fire, April 3rd,*

*2014 © Tara Jo Holmberg*



*Tara: "I remember calling the insurance company from the car and starting the claim from the car. And the only reason I remember that is because I had to leave a message. And, I remember...I don't remember exactly where we were if we were on South Main, or where we were, but we were somewhere. Maybe on Prospect? Somewhere up there. We were close enough we could see the plume. And I was calling to set a case number."*

After seeking medical care, we drove for hours that day trying to come up with a plan of action. We had nowhere to stay and nowhere to go. After a stopover at Dan's family business to make some calls, we were able to find one place in town that would allow us to have Ani with us: a run-down, dilapidated hotel with paper-thin walls. There was no furniture, save a small,

dirty bed and no refrigerator. It became our home for over two weeks. At that point, the fire was still out of control and would not be put out until sometime the next day.

During those first hours, I had vague distress about personal pictures and such because I thought there was a chance the house would go up in flames too. We arrived back at the house two days after the fire to find our house, driveway, and yard completely covered in oil, soot, and debris (Figure 10). Our house did not burn, which made revisiting and walking back away again even more strange. It was not until we were able to really do a walk through on the third day post-fire that we discovered all that was lost.

**Figure 10**

*Our rain barrel and gutters are coated in oil. April 5th, 2014 © Tara Jo Holmberg*



We met with the damage restoration company who had been contracted by our homeowner's insurance company to clean the house. The insurance company had yet to do a site visit; that would not happen until five days after the fire. It was clear from the oil smears on the outside of the house that there were impacts from the tire fire, but what was not as clear initially was what had happened on the inside.

Upon opening the door, there was the same acrid smell we had experienced the morning of the fire. My throat, still acutely affected (see Self), closed quickly; I was not able to enter. Dan, along with the contact from the damage restoration company, did a full walk-through and took stock of the interior. Everything was as we left it; nothing appeared amiss. The cleaning crew came in and sponge-washed the hard surfaces. This is their standard fire protocol: wipe down walls, ceilings, floors, and kitchen items. However, at the direction of our homeowner's insurance, the contractors did not clean any furniture that was not hard-surfaced, nor did they visit the attic or the cellar.

It took the contractors ten days, on and off, to clean the surfaces and, in the end, they left one of the sponges behind...blackened with the material that had been on everything. Many soft materials (clothing, bedding, curtains, etc.) had been removed, cleaned by another company, and dropped back off at Dan's family's business. Couches, chairs, computers, any porous materials, and other belongings like mattresses were unable to be cleaned and were left where they had been. The cleanup procedures by the contractor did not protect our property at all from secondary contamination (Figure 11).

**Figure 11**

*The porous barriers between properties while cleanup occurred, July, 2014 © Tara Jo*

*Holmberg*



During the three-month cleanup of the fire site, our property was contaminated even further. Our insurance company's contractor came back a second time several months later to clean again after even more fire compounds entered the house (Figure 12).

**Figure 12**

*Soot and oil particles gathered at the bottom of a toilet which had been cleaned and closed.*

*August, 2015 © Tara Jo Holmberg*



It is interesting to me that most of those involved in this entire story focused not on the signs of the fire that were starkly visible, such as the coating of oil and particulates everywhere, but on the lack of fire smell. Once the smell of the fire dispersed, except when it reared its head again from the initial site on hot summer days, it was asserted by most that all impacts must have been resolved. For everyone not directly impacted, there was a sense that everything was fine.

At the very beginning, even we it was thought that settling back into the house and space, after some additional spot cleaning, would not be out of the question. Moving back in was initially in the back of our minds. Dan was more vocal about wanting to return, especially as living in a run-down hotel became more and more wearing. I had a gnawing feeling in my gut that something was not right, however, and began researching the toxicity of the substances we now know to be in the house.

Part of this feeling came from our direct experiences on the property. Our socks were blackened with a greasy soot inside of our shoes from walking around the property and our legs were covered in grease from sock to knee underneath our pants (Figure 13). Seeing this so clearly made me start to panic about what had gotten into our lungs that day.

**Figure 13**

*My (formerly) white sock after walking through the yard, April 5th, 2015 © Tara Jo Holmberg*



On the inside of the house, when returning for paperwork we needed for insurance and to see if any of the furniture was salvageable, we noticed this same fine layer of black, greasy soot on everything: books, bags, toilet seats, windowsills. Some of these items had already been cleaned but many had not. Dan's truck had remained on a side street during the fire and we washed it three separate times to try and remove the dried rubber from the finish. When we saw that even a hard scrubbing could not fully clean his truck, we knew we would never go back to living in the house. We began to look for an apartment and, thankfully, found a duplex with a small yard for Ani in a neighboring town.

Donning a respirator in the weeks and months after the fire, I made several trips to the house to document the conditions for our homeowner's insurance company. This included taking photos of the inside and outside over the course of three years. Additionally, I was required to

document literally everything we owned, down to individual photos of the spines of the more than 800 books on our shelves, most of which were never replaced as they were depreciated in their final valuation.

I had no idea how arduous the insurance claims process would be. In a disaster that affects property, the terminology of an insurance claim is second in opaqueness only to that of the legal arena. It is exclusionary, confusing, obfuscating, and often requires translation into everyday language. In our case, the language employed became more technical as our claim went along. Ironically, due to medical claims of my past, I had patience with this type of language and was able to take a great deal of time and energy identifying what was said. Even with that, however, the learning curve was steep. For example, the idea of ‘subrogation’, the process of being reimbursed for items you have lost by documenting that you had them in the first place. Learning the various insurance terms, policies, and procedures on the fly, without coaching, was a part-time job in itself.

In addition, when the insurance company presented us with their own specialist’s testing of our property, the testing, report, and findings were heavy with scientific jargon:

*SAMPLING METHODOLOGY - Air Samples. Air samples were collected in the living room, the front bedroom upstairs, in the basement and outdoors as a part of the quality control. The samples were collected by first drawing air through a Zefon Air-O-Cell cassette, and repeated by drawing air through a Zefon CSA cassette. The samples were collected at a flow rate of 15 liters per minute for a period of fifteen minutes in each location. All samples were collected at breathing zone height. After the samples were collected in one location, the equipment was cleaned to prevent cross-contamination.*

*The samples were sent by overnight mail to [REDACTED] ([REDACTED]) The samples were analyzed by direct examination using bright light microscopy to characterize the number and types of particles present in the air. The Air-O-Cell cassettes did not have a sufficient particle loading to permit analysis so the CSA cassettes were used instead. The samples were analyzed for aciniform soot-like, ash-like and char-like particles which are reported as fire residue. In addition, the samples are analyzed for skin cell fragments, fiberglass fibers, cellulose fibers, soil/mineral dust particles and unidentified opaque particles. (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)*

By using this jargon in their findings to someone they initially considered a layperson, it leads to a system that is often obtuse and impenetrable for those who are affected by toxins. Their methodology was riddled with errors and the findings conflicted with the data presented in their final report. This would be unknown to someone without scientific training or who could not afford a specialty lawyer or outside expert. Finally, they also used very questionable practices to intimidate us by talking about lead in the soil, intimating that our property had lead paint (it did not) and that we were the source of any toxins in our environment. Ironically, the samples they used that tested highly for lead were located closest to the site of the fire, a finding not unusual in tire fires.

In this, I was fortunate due to my scientific knowledge, training, and background. I knew how to parse a scientific report and find the holes and contradictions in their position based on evidence. Our own independent expert later confirmed my interpretation of the data and supported it with his own testing. Not all those in this same situation would have that scientific background or be able to afford an expert who could assist.



After two years, we were able to have additional testing done by an outside toxicological expert, Dr. Foster. His findings matched my research and indicated continued contamination, especially in the out-of-sight places of the home such as electrical sockets, attic and cellar, and cracks in the plaster, by microscopic black rubber particles. After noting that the health risks from tire fires exceed that of wildfire smoke, Dr. Foster's recommendation was to gut the house, sandblast the studs, rebuild, and replace the topsoil to a depth determined by an independent specialist:

*a. There is ample literature that indicates smoke emissions from wildfires readily penetrates homes and is very potentially damaging to property and human health if exposures continue to occur. The literature regarding tire-fires confirms that the emissions from a tire-fire would be expected to present more health risk than wildfires smoke. Based on research, we understand the standard of care for decontamination of a home that has been impacted by smoke from a fire that did not occur within the home, is professional remediation. We further understand, that the standard of care is that the home is not considered remediated until all visual or laboratory indication of fire residue has been removed from the surfaces. All of the data generated by the HETI report, and the sampling and lab analysis conducted by Foster both indicate that the interior of the home is still contaminated by emissions from a tire fire.*

*b. The standard for determining contamination is visible observation & lab reports based on research done on this topic*

*c. Mr. Foster holds the opinion that there was and remains tire-fire residue in the house to a reasonable degree of Engineering and Scientific certainty and bases these findings and opinion on his education, training, and experience, and review of the documents*

*enumerated in Section D of this disclosure, his in person observations and analysis of samples conducted as his direction:*

*iv) Mr. Foster holds the opinion that remediation of the premises is necessary to a reasonable degree of Engineering and Scientific certainty.*

*v) Mr. Foster holds the opinion that the following actions for remediation of the premises are needed to render the components of the home and the surrounding soil located on the property mitigated. The basis for determining successful mitigation would be such that the home surfaces and soil would be expected to be similar to normal background levels found outside of the area impacted by the emissions from the tire warehouse fire event would likely be required and to a reasonable degree of Engineering and Scientific certainty. The following remediation effort, and the basis of his opinions, is based on a knowledge of basic building science and building pressures, i.e. how fire emissions would be expected to find their way into an older home. To a reasonable degree of engineering and scientific certainty the following would be expected to accomplish the remediation and decontamination task:*

*Based on the HETI report that found fire residual inside the electrical outlets, it is our opinion that the home following tasks would be effective regarding remediation:*

*a. Professionally gut the interior and exterior of the home as needed, taking it down to structural components and only exterior sheathing which is assumed to be pine boards.*

*b. Carbon Dioxide Pellet Blast the remaining materials such as is currently done by many remediation professionals to aggressively remove fire residuals, in order to remove the remaining rubber compounds from the wood. Follow this activity with meticulous HEPA vacuuming with HEPA filtered containment.*

*c. Cellar and crawl space: Carbon Dioxide Pellet Blast the wood, rock and concrete materials such as is currently done by many professionals to aggressively remove remaining rubber compounds. Follow with meticulous HEPA vacuuming with HEPA filtered containment.*

*d. Remove contaminated top soil from the entire property to a depth determined by a site assessment professional. Replace with new topsoil and landscaping.*

*e. Outdoor Air in the Vicinity of the Home: Determine if the outdoor air remains contaminated in the general area such that it will be expected to re-contaminate the home and determine a suitable method of neighborhood cleanup as needed. (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)*

The insurance company did not support these findings and stood by their original erroneous tests.

As we learned the language of insurance, we proceeded with logging serial numbers, taking photos, documenting approximate date of purchase, estimated values, and more. This took several weeks, tedious accounting, and lots of organization for subrogation. In the end, we were paid fractions for many of our possessions, even while we had to purchase many new items. This was extremely enlightening for both of us, especially when it came time to purchase new homeowner's insurance in 2018. We spent more time than most when shopping for the company and policy that we thought would better serve us were we in a similar loss position in the future.

It is interesting to reflect on how much this process angered and saddened me. I found it ironic that we had just bought living room furniture that we would never get to really use. Instead, what upset me were losing photos and books. I was sad that I could not flip through photo albums that I had for years, even though I had not ever really done that. I was angry about

our books because we had rare copies, or books as gifts, that were beyond a replacement cost or could not be replaced as they were out of print. For example, all my graduate school texts, which I had spent years accumulating, had to be left behind and repurchased, losing all my notes in the process.

We went through everything in the house, assessing its safety based on my research. Anything porous was left behind: wood that was not coated in polyurethane, ceramics, fabric; wicker, plastic, etc. Metal and glass could be deep cleaned and largely had already been cleaned once by the contractor, so we took those items and put them in storage. Select keepsakes and photos were put into Rubbermaid containers, sealed with tape, and stored for safekeeping and just the knowledge that they still existed (Brooks et al., 2018). Eight years on, we have decided to dispose of some of those same keepsakes, and we have found ways to preserve others safely.

To be honest, we did live a cluttered life at the time. There were items everywhere (Figure 14). This was noted in several of the filings of the defendants and in my deposition and was used against us. Living in a space you do not notice it from day to day but revisiting it became clear how untidy everything was. That realization has helped us, me in particular, have a new relationship with material things and consumerism in general.

**Figure 14**

*Items stored in our cellar, noted repeatedly in the defense materials, 2014 © Tara Jo Holmberg*



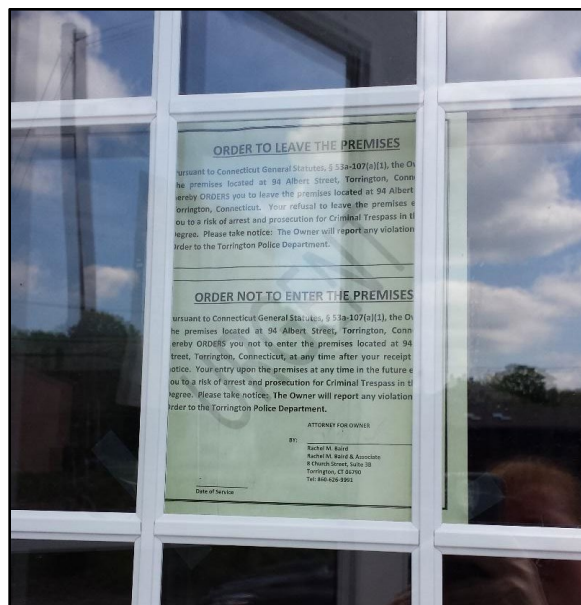
All important documents, mementos, and photos are now stored virtually for protection. On the yearly anniversary of the fire, we are in the habit of taking pictures of all our belongings to be able to document our possessions in case of a fire or other natural disaster. To help others in my life, I post an annual reminder for all of my friends and family to document everything in their own homes as well.

Eight months after the initial claim was filed, we were cut off from any compensation and told to move back into the home. We declined and added the insurance company to our legal

complaint. At that point, there was a great deal of limbo while we waited. The property was broken into three times that we know of. We had to pay to board up the windows and one of the doors. Notices had been placed on the doors since early in the process, but no trespassing signs were then stapled to the shingles to reiterate the point (Figure 15). What once held my pride became a decrepit building. I stopped using any route that would take me by the property so I would not have to see it and only stopped by if there was a break-in or something else needed our attention. We were at constant risk of being cited for blight and so needed to regularly petition the city that we were working through legal avenues to remedy the property.

### Figure 15

*An Order to Leave the Premises on our kitchen door, 2014 © Tara Jo Holmberg*



We made the decision to continue to pay the rent but stop paying the mortgage which, up until this point, we had continued to pay to keep my credit in good standing. Within the year, the mortgage company began to pursue foreclosure, making it difficult to sell the property to get out from the vulnerable position that we were in. Being summoned to even more court dates for foreclosure at the same time we were immersed in our legal challenges for the original fire was

more than stressful. I slept very little during these months worried about being sued, the further damage to my credit rating, and what all of this meant for our future as a family. It has taken me years to recover my credit rating from the foreclosure and negative consequences to my overall financial health.

Eventually, we found out that the insurance company had dropped our homeowner's policy, even though we had been keeping current with payments. Without a policy, we owned a property that left us completely vulnerable to potential lawsuits from others, including those who used the sidewalks around the house or who might break in. This was a terrifying prospect for us legally and financially. After every snowstorm we still needed to shovel the sidewalks and document everything with photos to protect our liability. The prospect of being sued kept us up many nights.

Thankfully, at the same time our legal fight was concluding, we were able to pursue a short sale with a local buyer. We disclosed all that was wrong with the property, including our expert's test results and conclusions and an additional complication that arose during the two years the house was boarded up. The buyer followed through with the sale anyway, did some renovations, flipped it, and is now renting the property out. It hurts me greatly to know that someone is living in that house but there is not much we could have done differently. This pain is due to the contamination we know was in the house. From what we have seen, the new owners did not remediate per our stated recommendations in the sale documents.

In the end, Dan was able to purchase a home with money I had saved over the past decade as a down payment. Because of the ramifications of the tire fire and the impact on my credit rating, I could not participate in the buying of the home or be on the deed. In fact, it has taken eight years for my credit rating to return to good standing, although it is still not what it

once was. While our idea of home is being together, and I know we are privileged to be able to relocate both to the apartment initially and then to a new house, it still hurts that I have not been able to legally be a partner in this new stage.

I appreciated the apartment we lived in after the hotel and adore our current house; we made both a home. However, I am no longer as connected to a place or space as I might have been had we moved here under different circumstances. I feel a detachment to the idea of home as it may be taken away at any moment. Many know this feeling...sometimes it happens by accident, sometimes intentionally, and sometimes due to neglectful practices.



## Self

*“Chemical and radiological violence, for example, is driven inward, somatized into cellular dramas of mutation that—particularly in the bodies of the poor—remain largely unobserved, undiagnosed, and untreated. From a narrative perspective, such invisible, mutagenic theater is slow paced and open ended, eluding the tidy closure, the containment, imposed by the visual orthodoxies of victory and defeat.” (Nixon, 2011a, p. 6)*

In this section, I will explore the acute and chronic violence on my physical self as a result of the tire fire and subsequent homelessness and extreme stress. I will also explore the psychological effects that had, and continue to have, impacts on my daily work, social, and intimate lives. The traumas in disasters are compounding, as I discovered through my own experiences.

Not being able to catch your breath is a feeling unlike any other. It is not just stressful, it is all-consuming. I have had asthma since I was small. Tightness in my chest and a high-pitched wheezing is familiar to me. Thankfully, under most circumstances, the narrowing and constricting of my bronchi is relieved with various inhalers. Pneumonia is different. Breaths are short and shallow. The heaviness in your lungs as they fill with bacteria and your own fluids is difficult to explain without experience. Medications can help but it is often secondary therapy, immune function, and time that sees a body through.

However, nothing of these experiences could prepare me for having my throat and bronchi chemically burned. For days, each breath was tortured and so painful I would cry. The acrid, toxic gasses from the tire fire coursed directly into my lungs for more than an hour the morning of the fire and made them feel like they were on fire as well.

I visited urgent care three times in 5 days and each time there was not much they could do for me other than to give me a nebulizer treatment (which I was doing on my own) and put me on a course of oral steroids (Figure 16). I spent hours giving myself nebulizer treatments to stay out of the emergency room. Rescue inhalers were in my hand constantly. The first course of steroids was not enough and was followed by a second.

**Figure 16**

*A self-portrait at urgent care, April, 2014 © Tara Jo Holmberg*



*Dan: "I feel like for a while, probably the whole time we were in the hotel, and probably longer, but it wasn't as acute after that. I feel like your breathing didn't really get back to normal for a long time. So those first couple of days afterwards that was mostly what we were dealing with. Physically."*

Steroids, such as prednisone, have a number of different side effects, very few of which are pleasant. I had dealt with some in my past (uncontrollable hunger, insomnia) and laughed

them away with dark humor...my go-to in situations of health conditions. However, during this time I suffered from a secondary fungal infection in my mouth and throat. Otherwise known as thrush, it is particularly painful as it decomposes live tissue and dangerous as the fungal spores can travel to the lungs. Ironically, the very organ that was being treated for damage. Fungal infections are particularly difficult to treat and once someone is colonized with a pathogenic strain, it is almost impossible to fully get rid of. I was placed on a course of systemic antifungals, with their own set of unpleasant side effects and the infection cleared within a few weeks. Unfortunately, now that I am colonized, I get thrush at least once a year and have a standing order for antifungals.

That was not the primary concern we had about my health, however. Given that I am a two-time cancer survivor, the consequences of my exposure to known carcinogens will not be known for a long time. I was already playing a life-long waiting game of if, and/or when, one of my prior cancers would rear its head again. Now I have a new set of concerns regarding lung and organ damage.

Pursuing answers and litigation required perseverance on my part, but also an understanding from my partner on why it was important and what I was trying to accomplish:

*Tara: "I would stay up really late after you went to sleep and start researching. But like if you'd have a really bad day, somehow, I would pull myself together enough to like, get done when I need to get done. And vice versa. Like that we kind of traded it off that we've never done that we've never really been through something like that, like we've been through cancer, but that's different. That was like I was a patient, and you were a caregiver. But this is like where we went through something together. And we needed to have a lot of teamwork."*

*Dan: “Yeah, we had to really advocate for ourselves too, which is different from the cancer thing. I mean, obviously, in a medical situation, you do have to advocate for yourself. But in this situation, we felt like there were people working against us.”*

As an environmental scientist and educator, I knew that the burning of tires could not be a good thing. That there were likely long-term impacts from exposure to the oil-based compounds that went into the making of road and heavy-duty tires. However, it was not until I dived deep into the literature that I discovered the extent of the possible problems. Because of my education and background, I had a lot of skills working for me. First, I knew how to do term-based searches to find what I was looking for due to skills I have acquired in digital literacy. Second, I used my media literacy skills to weed out sources that were unscientific or industry-biased. Third, I did not just limit myself to websites but scoured journals, white papers, and the gray literature, all of which I had access to at my place of employment and through Antioch University as a paying graduate student. Fourth, I was able to parse the information in those publications, even though they were outside my area of expertise, largely due to my multiple degrees in science. This is not the case for most of the public, especially access to scientific publications behind paywalls, leaving much of society unable to access the science that might otherwise be of use to them (Schiltz, 2018).

From the second night of the fire, I began scouring for information which, unsurprisingly, was incomplete and poorly understood as a field of study. Tire fires are not common events. When they do happen, it is often at large landfills which happen to be further away from the general public (although some famous examples have happened directly downwind of communities) (see Ritter, 2013). Accurate and representative air quality samples are hard to gather, and few studies have looked at remediation of the compounds in soils. Only a handful

published studies at the time had done controlled or simulated experiments looking at the conditions of a tire fire to examine what compounds were emitted from complete and incomplete combustion (Lemieux & DeMarini, 1992; Lemieux & Ryan, 1993). Like the fire that happened next door to us, most tires are incompletely burned during a tire fire for several reasons, and this level of combustion is more hazardous than a complete burn (Downard, 2014; Lemieux & DeMarini, 1992).

Due to other obligations and my poor health, I fought insomnia for months. I used that time to research and after consolidating the findings, we were able to rebut our insurance company's claims that the house was safe to move back into (see Home and Appendix D). I was then able to turn my research into helpful guidance for my asthma physician, who then based treatment on my findings (Figure 17).

### Figure 17

*Visit notes by allergist/rheumatologist, April 9, 2014*

<p><b>Treatment</b></p> <p><b>1. Extrinsic asthma with status asthmaticus</b> Continue inhalers particularly for exacerbation of asthma.</p> <p><b>2. Respiratory conditions due to smoke inhalation</b> Asthmatic exacerbation associated with smoke inhalation from toxic rubber tire fumes. Will start prednisone at a higher dose and taper over 12 days. Continue nebulizer treatments. I agree that she should not enter the home until it is clear.</p> <p><b>Follow Up</b> 1 month or sooner if symptoms do not improve.</p>
--

Again, here I was fortunate in that I had a doctor who was willing to follow the science that I had found, rather than working from incomplete information or being threatened by a patient bringing in information they are unfamiliar with. My physician has met with me at least 3

times per year since the fire, monitoring my lung volume, watching for additional symptoms, and checking in with my overall health to make sure that I do not have any chronic health impacts due to my exposure (Figure 18). My physician is retiring soon, however, and the thought of working with a new physician who did not go through this traumatic experience with me as my doctor is frightening. I do not know what my future care holds for my bodily health.

### Figure 18

*Progress notes by allergist/rheumatologist, April 7, 2016*

#### **Reason for Appointment**

1. Intermittent coughing in inflammation in the lungs.

#### **History of Present Illness**

##### New Symptom:

Although TaraJo has not been wheezing has been relatively stable on the Qvar. She still gets bronchial inflammation. She is a teacher and tends to get multiple infections but has been much more susceptible said she has had mucosal injury to the lungs. Prior to the smoke exposure her asthma and coughing had been well controlled with medications. It appears she is more susceptible to infections which causes asthmatic exacerbation.

In May 2014, after the fire, I had returned to work for the last two weeks of school, even though I still could not speak. My students led their own classes with me as a guide-on-the-side. I was grateful that this at least took place towards the end of the semester when they were comfortable with me as an instructor, but also felt terrible for letting them down.

I kept wondering when the next shoe would drop. Panic attacks began to set in as my asthma was still not under control and I was running on very little sleep. I had been prescribed Xanax at one point, but it made me hallucinate so I did not continue to take it. I became jumpy at sudden sounds and things that moved into my peripheral vision. I was hyper focused on what had

happened and wanting to make it right at the expense of other aspects of my life. I became very reluctant about being social as conversations often turned to progress with the case and we stopped the hobbies that we had once enjoyed.

*Dan: "You know, I still don't even know your process for how you deal with stuff. I mean, it seems to me that the way you deal with stuff is to just work. You just focus on stuff, and you work and work and work. That's not the way I do it. So, I don't know. I mean, how were you processing stuff? I don't, I don't even know if you were. I mean, I suppose intellectually, you had to because you had to have all your information together. You had to understand the information that was being given to you and what was required by various parties and all that stuff. But how you were processing it emotionally, I think probably you weren't? One thing I remember is, I did something and playing with the dog. I think I made a loud noise, and you lost your mind."*

*Tara: "Did I yell at you?"*

*Dan: "You did because it had scared you. Like you went to a place of emergency in your head and couldn't quickly come back from it. You know, like normally you get startled by something and you realize what it was and the adrenaline calms down. And that's the end of it. It seemed much more acute than that. I suppose...that was about when you started not sleeping well, an affliction that dogs you to this day for various reasons. Can't remember any specific instances where, like, we couldn't make plans to do something because you were too busy with the legal stuff. But I suppose you were doing like you always do and you just work on stuff in any little gap of time that you can, five minutes here, 10 minutes there. I don't always know what you're working on."*

Around me, people noticed a change. Friends and colleagues observed my distraction and my increased need for solitude...not things I was generally known for. It was additionally hard to talk about to people because the general feeling was either we were better off or at least the house did not burn down. On the other hand, a colleague and friend stated that from the day of the fire that there was concern among close friends about how I was doing both physically and psychologically:

*Colleague: "I was, you know, very concerned about you. Um, obviously, it was very devastating news. And then, yeah, and then you did get in touch with me. I remember that. Let me know that you were, you know, alive. Yeah. Basically, I would say okay, but no, you were not okay..., I remember it was just, overall, very upsetting. I remember that you know, you went through a lot of uncertainty during the process because, you know, they're telling you to stay in your house and then leave your house and then you know, you had your animals, I believe, right? And, you know, there was really no clarity from any of the responders or the company as to, you know, protocol for what should be done in that situation. And then on a more personal note, I remember just being concerned about where you're going to go, what you're going to be able to do."*

And

*Colleague: "...I think, you know, you always try to put on a good front. And try not to impose your hardships on other people. But that said, you know, it was clear that you were having a hard time with everything....like, when you when, you know, someone...there's a certain amount of energy and light in their eyes that they usually have, and that was totally gone for quite a long time with you. And then, you know, I think probably some, you know, some depression"*



As someone with a mostly steady disposition, my emotions roiled. I was sad most of the time. Sad for losing our home and our possessions, things that I know now do not matter so much. At the time, though, they were a touchstone, something that connected us to our life and we no longer had those.

I was also scared. Scared about what was going to happen; scared about where we were going to end up. Scared of losing financial stability, of losing my health, of losing control of our lives. I was intimidated by having to enter into systems that I did not know. This is clear when watching the initial media interviews after the fire (*Families Displaced*, 2014). We were hesitant to say anything negative about the responsible actors as we did not understand the legal system, insurance system, foreclosure system, etc. that we would soon be immersed in. All of those aspects of society were intimidating processes if you are not familiar with them. They had never been part of my life and, shamefully, it is my privilege that allowed me to think I would never have to work through them.

However, the emotion that surprised me the most, and what I think kept driving me throughout the entire four-year legal process, was anger. I still feel angry today about what happened. I am angry at those that allowed this to happen through negligence. I am angry at the way the systems are set up such that it is the victims of toxicological violence that must work to be made whole. I am angry at the policies that allow for corporations to become embedded in the safety nets that are supposed to help in situations like this. Angry at the ambivalence of the greater community to those who were affected. I am angry that we were put in this place and that our lives were fundamentally changed as a result. Some of these emotions come through in a later video picked up by the media in front of the house in August, 2014 (*Holmberg Interview*, 2014).

This change in my emotional state stemming from a difficult situation was not new but the level to which I was affected surprised not only me but those around me as well. After my second cancer diagnosis in 2009, I had sought counseling to help with feelings of helplessness and fear. The months I spent in therapy were constructive and my therapist was very supportive. Thankfully, my sessions were covered; first through the Employee Assistance Program then through my employer's health insurance. The tools I gained assisted me through my years of treatment.

After the fire, I agonized about adding yet another thing to my life but recognized I could not hide what I was going through from friends, family, colleagues, and students. My personality was changing. I was much quicker to get angry. I became more pessimistic. I was increasingly scattered and unable to focus, both at home and at work, and I was less driven. That over everything else pushed me to get help again as I am a private person when it comes to my real emotions. Over the summer, I returned to the same therapist, who was shocked by what had happened. We painstakingly worked through the details of the events and then through my emotions. It was raw and painful.

I was eventually diagnosed with post-traumatic stress disorder due to my many continuing symptoms and my responses to new events (Figure 19). This is supported by Gibbs' (1982) manuscript where, in a community experiencing a toxicological crisis, the majority of the respondents reported negative emotional responses, and Edelstein's work (Edelstein, 1981, 1984, 1999). The psychological impacts can be deep and lasting: personal changes, psychopathy, acute and chronic stress, and more (Edelstein, 2004). Thankfully, my relationship with Dan stayed strong. We avoided many of the negative outcomes that some couples in similar situations have experienced and we did not have children (Edelstein, 2004).

My counseling lasted nearly a year and was somewhat successful but there came a time where, unfortunately, my therapist had to recount my diagnosis to the defense lawyers in place of a deposition. Once that was done, I could no longer see her as a therapist, and I was crushed by the idea of having to start all over again. I have tried twice since then to begin therapy: the first therapist dropped me after two meetings and the second checked her email during my first session. Finding a therapist to connect with is hard and I do not know that I have the heart to keep trying.

### Figure 149

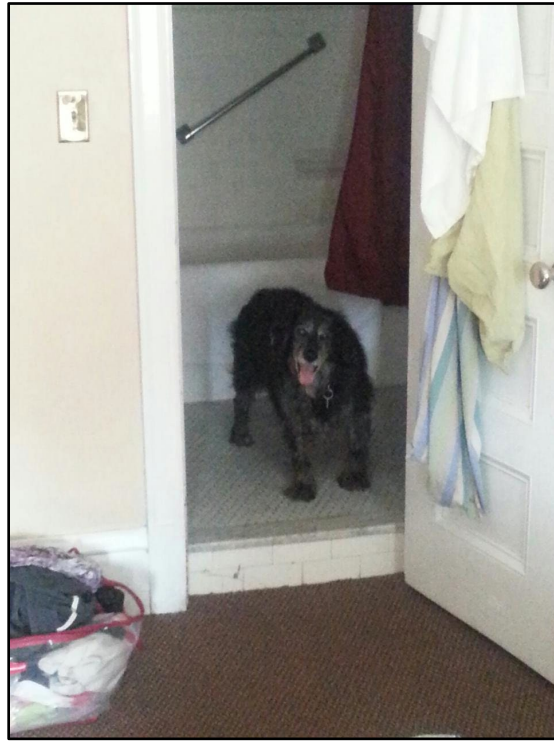
*Diagnostic notes from psychiatrist, 2017.*

		Diagnosis:		<input checked="" type="checkbox"/> DSM Codes (or successors)	<input type="checkbox"/> ICD Codes (or successors)
Check Primary	Code		Narrative Description	Status	
<input type="checkbox"/>			Persistent Depressive Disorder		
<input type="checkbox"/>			Generalized Anxiety Disorder		
<input type="checkbox"/>			PTSD, chronic		

To add to everything else, our dog Ani passed away in September 2014. For anyone who has lost a beloved pet, they know how hard this is. She could no longer walk well, see, or hear. In the hotel we lived in for a time, she would shelter herself in the bathroom where it was small and confined, likely to feel safe (Figure 20). When we moved into the apartment, she became disoriented frequently and we had to sequester her in the smallest room for her comfort and safety. Without the familiar surroundings of the past nine years of her life, she frequently would sit and face a wall. Her appetite waned from the day we left the house and, eventually, she lost a third of her body weight. Ani had moments of her old self but many more days and nights of shaking in fear.

**Figure 150**

*Ani taking shelter in the hotel bathroom, April 2014 © Tara Jo Holmberg*



Eventually, Ani let me know without question that she was ready to move on; we arranged with our veterinarian to come to the apartment. As for most with the passing of a pet, my grief was raw. It was compounded by the fact that Ani was the last of my pack that I had taken care of on my own throughout my 20s and 30s. I felt to my core that I had let her down. I knew that her cognition and health decline would not have been so acute had it not been for the events she had to endure. I felt so guilty that Ani spent her last months scared, unsure, and impacted so significantly. It cemented even more to me that things were fundamentally different. Both of her packmates had been euthanized in the comfort of the home they had known for years. I swore that I would do everything I could to make sure that none of my future pets were put in a similar situation.

Without a dog our housing situation felt less like a home. I had had dogs continuously since I was 17 years old. At 38, I knew I would not be able to last long in a silent house...I needed to hear the clickety-clack of nails on the floor, light pants, and soft eyes willing us to get up in the morning for breakfast. We made it three weeks before beginning to look and shortly thereafter saw a picture of an older puppy from a rescue that clinched it for us. We took a drive up to New Hampshire for a meet-and-greet and adopted Julius the next weekend.

*Dan: "That's what it looks like to get your life back on track, right? Yeah. You can't let something like that. Be your whole life. It's something that we had to deal with. Mostly, you had to deal with it. Because it was all legal stuff and negotiating with the insurance company. But that can't be everything that you're about. And, so, we started to do normal things. You know, we lived in a normal apartment. We went out and got another dog."*

*Tara: "It's funny, though. Like they tried to put all that back and like try to bite me in the ass with that. By the car. Buying a car having a dog being in an apartment."*

*Dan: "Oh, like all your life is normal now. Yeah."*

*Tara: "Yeah. Like, like, if you're traumatized, you should be 100% in your trauma all the time. Like that was their take...that I must be either lying, or it's not really that bad."*

In between research, legal meetings, emails, and work, we busied ourselves with obedience and other behavior courses. Having a former stray to train and help become accustomed to home life was a great distraction from the stresses of those years. I threw myself back into work and have had the most productive and rewarding professional years since 2018 when the lawsuits concluded.

Eventually, the acute trauma I had been suffering became a chronic, dull ache. I still suffer from PTSD. Loud sounds or sudden movements still evoke a startle response. I scare

much more easily when not expecting someone to be in a certain place. I struggle with insomnia and significant bouts of depression. To this day I avoid driving by the old property, if possible.

I like the house we currently live in. I love our new dogs. But I cannot help but know that life would not have been as hard had none of this happened. I also wonder if some of my other health challenges may have not been so severe as they are currently...if I had not had all of that stress over the course of years, might my newly diagnosed autoimmune disorder not have been triggered?

## Nature

*Casualties of slow violence—human and environmental—are the casualties most likely not to be seen, not to be counted.* (Nixon, 2011a, p. 13)

In this section, I discuss the conflict I felt at not being able to advocate for nature. In addition, I address how this impacted me personally and professionally. Finally, I introduce someone who was willing and able to take on the challenge for a time.

My connection to nature is very strong. However, I needed to be reminded on a regular basis by both Dan and my attorney that I could not stage a fight on both fronts: that of our own concerns and that of nature. It was a challenge for me to stay focused on our personal, financial, and legal challenges. Every time we had to stop by the property, the slicks of oil inside and outside the house and coating the plants reminded me that we were not the only living things affected by the fire. My heart ached for the organisms in the soil that were affected and for all of the native plants we had landscaped over the years that were impacted. My tulips, which had just begun to come out of the soil, still held little pools of oil-slicked water in them 3 days later. One woman who was interviewed a few weeks after the fire noted that she no longer walked her dog by my property and the warehouse as her dog's paws would become coated in a sticky substance that was very difficult to clean off (*Health Concerns Grow after Factory Fire*, 2014).

Most of my concern for the natural systems was over the 2 million gallons of water and hundreds of thousands of gallons of firefighting foam that were used over the course of 24 hours to put out the blaze. Much of that ran off through our property and then into the nearby Naugatuck River through the storm sewers. There were booms that were eventually placed near the storm drains, but it was not enough to catch the amount of oil, tar, and other chemicals that came out from the warehouse (Figure 21).

**Figure 21**

*Oil covered booms on the sidewalk in front of our property, April 2014 © Tara Jo Holmberg*



In the weeks after the fire, the city quietly began vacuuming and cleaning the storm sewers, something I had never seen them do before or after (Figure 22). It was clear from the media attention that much of the concern was for the building and inventory that was lost (*Fire Causes Environmental Concerns*, 2014; *Fire Still Flaring up at Tire Warehouse*, 2014). Not for the impact that negligence and the tire fire had on the people living next door. And not for the natural systems that would be affected.



**Figure 162**

*The Department of Public Works vacuuming storm sewers, April, 2014 © Tara Jo Holmberg*



As an example of this lack of concern, there was no abatement during the cleanup of the property at 96 Albert St. Oil slicks were clearly seen throughout the debris field, unprotected from rain and runoff. The workers often wore personal protective equipment, but the surrounding land and waterways were not safeguarded by even the most basic structures such as runoff blocks or non-porous fencing (Figure 23).

**Figure 173**

*A cleanup technician in an oil-covered jumpsuit walking through the demolition site, June, 2014*

© Tara Jo Holmberg



I knew the effects that the runoff would have on the river and it broke my heart. By 2014, I had studied the Naugatuck, an urban river that passes right through the heart of Torrington, for the previous 12 years on its ecological health and recovery. The history of the Naugatuck is that of many in the Northeast United States: it served mills and other industry for centuries and was also used as a generalized dump for sewage and garbage for just as long (Naugatuck River Association, 2017). When my classes first began our ecological river investigations, in fall of 2003, it was in a sad state of affairs. Only shortly before the fire had it been cleaned up and monitored by the state (FB Environmental Associates, 2012; mycitizensnews, 2012; Naugatuck Valley Council of Governments, 2022).

Over time, due to statewide grants, the closing of a few chronic polluters, and pressure from local non-profits, much of the river through downtown was finally left alone to recover. In our class observations, I had seen the chemistry improve and sensitive macroinvertebrates return.

I brought students to areas with backdrops of warehouses, bridges, and other signs of human impacts and they increasingly surprised over the years at what we found. There were still the problems of road salt and sand, but it was no longer being used as an industrial and community waste site.

With the April 3rd, 2014 fire, however, progress in the area where the storm sewers drained stalled and I could no longer, in good conscience, bring my students to our old sites, which happened to be downstream. I did not want to expose them to whatever may be on the riverbanks or in the sediments. Our study of that part of the river was ended. Instead, I began taking classes to study a site upstream for a few years before it became too hard for me to do emotionally. I eventually moved our study to a completely different urban river located closer to campus.

Thankfully, there was a local champion who was able to bring attention to what had happened on April 3<sup>rd</sup>, 2014 and beyond. It was days before the impact on the river was known. A former student of mine, Ben (name has been changed), an avid fisherman, journalist, and conservationist, took a walk along the riverbank early in the process and found large globs of tar and oil both in and out of the water. We kept up by email conversations with me giving him slight nudges in various directions based on the contacts that I had in the region:

*Ben: 4/5/2014 12:30 PM Who can help?!?*

*Tara: 4/5/2014 12:42 PM Did you hear back from the Watershed Association? You may also want to send in some of your pictures to the various news agencies and see if they can do some coverage. Try the Inland Wetlands of Torrington [REDACTED] - she's new but it's worth letting her know...esp after Torrington was working on the oil leak last year. Are you going to cover it in the paper?*

*Tara: 4/5/2014 3:46 PM This may help too:*

*<http://rma.org/wp-content/uploads/publications/GEN-067-Tire%20Pile%20Fires-Prevention,%20Response,%20Remediation.pdf>*

*Ben: 4/6/2014 11:36 AM thank you for the link..... i dont even know what to say. the stats in there about the number of carcinogens in the byproducts of tire fires is almost beyond belief. who is testing water? soil? i saw in the news that no air quality tests were performed? what about pets at the homes of the people that were covered in blackness? who is testing at the thomaston dam? at the confluence with the housatonic? how was it just accepted when jeff chandler from DEEP said their was little danger to aquatic life in the river that was filling up with pyrotytic oil (2 gallons per tire) and ash? i hope i am wrong in feeling like this is a much bigger deal than anyone is deeming it, with effects that are going to be felt for a very long time, with consequences reverberating throughout the ecosystem beyond what i can imagine. the crippled snail's pace that this process has taken is baffling. not more than 2 Moran cleanup trucks on scene until days after (not until a story was on the televised news about the river). is this just the way these things work? nobody really concerned until all of the fish that were stocked right there on 3/21 are floating? or herons are found covered in petroleum products in peoples front lawns? i pray to whoever is listening that it doesnt come to that, but is that what it will take for people to care enough to clean up the inches thick rubber debris that is STILL sitting on the banks of the naugatuck after the rain, and that is STILL piling up everywhere it escapes the current down at the 118 bridge and in lakeville at exit 41 and .....*

*Tara: 4/6/2014 2:47 PM Hi Ben, They tested the air quality during the event but I don't think they've been testing since then. I can tell you that my house today is downwind again and it's impossible for me to even stand in the driveway without my throat closing up. We can't live our house for the time being. I'm really just as shocked as you are regarding the lack of response... Have you heard anything back from the various organizations?*

Ben alerted several local and state organizations of what he had been seeing on the riverbanks. By April 6th, the state environmental organization had come to do an assessment and left booms in the river at the storm sewer drainage where most of the effluent flowed in. They came the next week to clean the river (Figure 24). Ben wrote an article about it in the local paper. Of course, by that point, there was no more effluent and much of the contaminated water had already made it downstream. There were reports of oil slicks and tar balls 30 miles down the river, close to Long Island Sound.

### **Figure 184**

*Moran Environmental Recovery cleaning the banks of the Naugatuck River, April 10th, 2014*

*©The Republican American*



After speaking with me, he then called one of the television stations that had recently done an interview with Dan and me. They came out to the river several days later and interviewed Ben, who showed just what was continuing to be found in the river (*Naugatuck River*, 2014). I had to watch this all from a detached position but wanting to help bring attention to this issue through the media using my credentials and standing as an environmental science professor. Under the advice of my lawyer, I had to let impacts go and let others follow whatever course of (in)action was going to be taken. Ben did a great job of pursuing, but he had his limits as well and sent me a message a couple of months later, frustrated at the lack of progress he had been able to make. We commiserated, and I suggested some possible courses of action to bring more attention to the problem, but eventually life pulled him in another direction. Sadly, Ben passed away a few years ago. He had a great spirit and worked hard to help mitigate some of the environmental damage that was done. I wish he had had the chance to do more with his gifts, but I know he made a difference while he was here.

## Community

*“In the long arc between the emergence of slow violence and its delayed effects, both the causes and the memory of catastrophe readily fade from view as the casualties incurred typically pass untallied and unremembered”* (Nixon, 2011a, p. 8).

In this section I discuss the connections and disconnections in our community as a result of the tire fire on April 3, 2014. In addition, I establish the role of each of the primary responsible actors in the community and their political and economic power. Finally, I discuss the lack of sociopolitical aid on the part of state and municipal governments.

The companies that owned the warehouse are well-known in our region and beyond. By some estimates, O&G Industries, Inc. is the largest employer in the county (outside of local governments) with over \$400 million in earnings in 2020 and second largest in the state (Connecticut Data Collaborative, 2012; Statista, 2020). According to Bloomberg Markets (2022), they provide services including construction, paving, heavy civil projects, construction and project management, and general contracting.

Owned by one family since 1923, O&G Industries, Inc. also have numerous subsidiaries and subcontractors engaged in their services. They are involved in many large construction projects, especially public works like schools, Connecticut’s international airport, and medical facilities. In Litchfield County, CT, where Torrington is located, they own many quarries, commercial and residential buildings (where they serve as the landlord), and their management serves on Boards of Directors. As an entity, they are political donors and are well-known in the city and beyond. They owned the warehouse and some of the tires and equipment at 96 Albert St that burned in April 2014 (Figure 25). At no point did O&G reach out to the neighborhood to check on residents or their property before or after legal representation was obtained.

**Figure 195**

*Four photos stitched together to show the damage to the warehouse at 96 Albert St, April 4th, 2014. © The Republican-American*



Toce Brothers, Inc. is another family-based business in the area. It has been in operation for over 100 years. Their primary business is the selling, installing, and repair of tires. I had purchased tires from them in the past. They are also well-known throughout the city, although not nearly as well-connected as O&G. Instead, they are seen as the epitome of the ‘Mom and Pop’ type of family business that many towns and smaller cities like to advertise. They have a storefront and shop on one of the main streets throughout town and are the go-to for many residents. They rented the warehouse at 96 Albert St and most of the tires and small equipment that burned was theirs. At no point did Toce reach out to the neighborhood to check on residents or their property before or after legal representation was obtained.

*Dan: “I just, I remember being very frustrated because we couldn't get any information. And we didn't have a next move. For like, what do we do? I mean, you can't even go home. It's like, that's what you do in those situations. Right? You go home and you figure it out. But we couldn't go home!”*



On the other hand:

*Dan: "I think that for the first couple of days, you were very busy. And so you didn't have time to be too upset about it. I mean, obviously, you were upset about it, angry about it. But I don't think we had gotten to despair, yet. We still felt like we were going to get some help. And we were going to get it resolved. So I think early on, I mean, aside from your breathing issues, which of course, can instill panic. I think that we were in mentally in fairly good shape."*

Stepping back from myself and watching the public's response to the fire was interesting when I could bring myself to do it. It was one that you would expect to see in a large fire: a lot of initial interest in the 'drama' of big flames and black smoke but a quick loss of interest once the fire had been completely extinguished. The day of the fire, there was no mutual aid, and the typical routes of emergency response were non-responsive. According to the firefighters and police, the Red Cross had not been called to respond. We traveled to the local community center and soup kitchen and found both closed. We even tried one of the main fire stations looking for help but were gruffly turned away.

The impersonal nature of the two companies directly involved in the fire indicated to me that they had no intention of doing the right thing or moving towards a quick settlement. Their statements to the press were boilerplate and all communication with the media stopped after the Fire Marshall declared the cause unknown. However, public opinion positively centered the companies in two ways. The first was an outpouring of support and sympathy for the owners of the companies for their losses. The second was certainty that the companies would do what was right for anyone affected by the fire. Most of this opinion was seen in community-based social

media groups, in online responses to news stories, and in conversations we had with people in town.

After the flames were out, and the smoldering ceased, the fire became old news. There would be an occasional story in the media, usually at our behest, but the larger community response was that we were ‘gold diggers’ and trying to take advantage of companies that were already hurting. The press picked up on this and the stories began to change, even as the initial interviews went well. When a television story aired profiling us as attention-seekers, we decided to abandon trying to win in the court of public opinion (*Fire Damage*, 2014).

It was not surprising that so many were quick to defend and side with these mid-to-large companies. There are so many in the city and surrounding areas that are employed by one or the other, or a subsidiary, or are related to someone who is, that most would not be willing to state anything publicly. On social media that day, and the days following, a few health concerns were stated from residents of our neighborhood who felt comfortable speaking up. Not everyone felt comfortable, however. Much of the neighborhood was made up of long-term renters, low-income families, and immigrants, many of whom did not speak English fluently. Those living behind, and next to me, were often living on the margins and did not seem to want a great deal of attention paid to them. At least one who did reach out was basically told it was nothing to worry about by a toxicologist with the Connecticut Department of Energy and Environmental Protection. This was gleaned from an email correspondence with the Torrington Area Health District’s Director of Health in 2014 that we obtained through a Freedom of Information Act request. This email from April 9<sup>th</sup>, 2014, read:

*Just to let you know, I received a call from a woman living at [REDACTED] that had concerns about soot in her yard and her cat bringing it into the house. She’s a renter and pregnant*

*with a small child. I'm going to call her back but the only advice we would have would be to water the lawn well and hire a contractor to water and rake up pieces if she needs piece of mind. Her neighbor was using a leaf blower that was creating a big black cloud which was a pretty bad idea. (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)*

The landlords around us were a somewhat different story (*Homeowners Assess Damage after Tire Fire*, 2014). Several did feel initially comfortable looking for some compensation from O&G or Toce or both. One initially reached out to us asking if we would contact him to discuss matters. They wrote us a letter in June of 2014, requesting to talk to us about the fire and expressed frustration with the subsequent lack of responses by the owners of the building and its contents. The neighbor alluded to others who had expressed similar concerns but nothing ever came from the conversation that followed. However, in the end they did not want to rock the boat with a large corporation. Instead, from the three owners we spoke to during this time, all pursued some small recourse through their insurance companies and politely refused to join our suit. In the end, they did not receive much (one was only able to get his house power washed) but seemed to be satisfied with what they received.

Initially, my friends and colleagues were amazingly generous. One family took us out to dinner the night of the fire when we did not even yet know where we would be spending the night. We received many gift cards to restaurants during the first two weeks which helped us to get food and water through our roughest time. We spent a great deal of time and money at our local diner and family restaurant. Dan remembers it this way,

*Dan: "I mean, the whole thing kind of happened on Facebook, I think because that's the way that we communicated with people back then. So once we put it out there that we*

*weren't at home because of a fire, then people started saying, 'Oh, come let us buy you dinner.'"*

In a twist, another friend gave me back the clothes I had given to her after she had a fire at her home a couple of years earlier. My colleague bought me a week's worth of clothes to wear until we received our clothes back. Many sent us warm thoughts and encouragement to heal and take our time. My administration was very understanding and allowed me to work as much as I needed to online until I could breathe more fully.

For as many that did come through, there were surprises by those who were silent or absent. Some of those we considered close friends did not reach out at all during this time or were happiest acting as though nothing had happened to us. As time wore on, our situation became almost a point of contention as they did not agree with our course of action. It was the first large wedge in a series of events that would drive us completely apart from them.

*Dan: "And that was kind of a...that was a sort of an indication of the way things would go. Was like they just wanted to buy us dinner and then everything would be fine. Right? You know? So it's like, okay, it's over now. It's over for everybody else."*

Over time, as expected, the fire drifted into history for everyone but us. Between financial, housing, and legal concerns, it was still part of our day-to-day lives. Occasionally someone would ask if we were "done yet" (meaning had we settled) or if we had given up. Once in a great while someone would ask how we were doing. But for every one that asked us that there were far more for whom it was almost an exciting time to remember; they seemed to enjoy consuming our trauma. We stopped sharing our experiences and kept things close to the chest starting a couple of months after the initial event, especially as we realized we would likely be involved in a protracted legal situation.

We did have one more story written about us (Johnson, 2015). Entitled “Abandoned after fire. Suit: Torrington tire blaze ruined house and nobody cares” gave us time and space to be able to express our concerns to a larger audience of the city. Upon seeing the article, we hoped that the title might engender some empathy but to no avail. In fact, there were no responses at all from the community to this story in the positive but several letting us know that we should stop whining and fix our ‘blighted’ property.

Our local Department of Health was of no help. They did not reach out to nearby residents. They also did not assuage any concerns that were related to them through my attorney. In the end, through a Freedom of Information Act (FOIA) request, we were able to find out that a document was put together that was ostensibly meant for residents but was never distributed:

*SAFE CLEANUP FOLLOWING THE TORRINGTON FIRE*

*On April 3" a fire broke out at the O & G Warehouse at 99 Albert Street, resulting in significant amounts of smoke and debris being released into the nearby area. The warehouse was used to store tires for a local tire store which burned during the fire. Tire fires are known to produce irritating smoke as well as ash and soot that may need to be cleaned off of nearby buildings and properties.*

*If your property has visible soot or other debris from the fire, you may need to take steps to clean your property. First, keep children and pets away from areas with visible fire-related soot or debris until you follow the clean-up steps provided in this document.*

*HEALTH EFFECTS FROM TIRE FIRE SMOKE*

*Smoke from tire fires contains particulates and chemicals that can be very irritating, particularly to young children, the elderly, and anyone with asthma, heart or lung*

*disease. See your doctor if you are experiencing respiratory problems or other health symptoms that have persisted since the fire.*

#### *CLEANUP OF RUBBER PARTICLES, SOOT OR OTHER FIRE-RELATED DEBRIS ON THE OUTSIDE OF BUILDINGS AND PROPERTIES*

*If your property is visibly contaminated with soot, rubber particles, or other fire debris, you should to clean your outdoor living space, including outdoor furniture, children's play equipment, vehicles and other items with which people or pets come into contact. Spray with a hose and/or use biodegradable detergent solutions. Wear gloves to protect your skin from exposure to the detergents as well as soiled surfaces as you clean. Areas that have sticky particles or residue may need to be scrubbed or scraped off to remove rubber particles sticking to surfaces.*

*If you see soot or fire-related particles on your lawn or other plantings, deeply water your lawn and rinse the leaves of plants that children or pets are likely to contact. This washes many contaminants off the surface of leaves and down into the soil where people and pets are less likely to be exposed and where contaminants can be degraded by soil bacteria.*

#### *CLEANUP OF INDOOR AREAS*

*Soot or other fire-related particles tracked into the home can be wiped up with wet paper towels and/or soap/detergent solution. Homeowners may wish to have family members leave shoes at the door in order to limit the amount of material tracked into the home until outside surfaces are cleaned. Inspect and clean window wells and window sills in case any material came in through the windows - any evidence of fire-related material*

*indoors (e.g., soot on interior surfaces, indoor fire odors) means that the affected rooms needs a thorough cleaning.*

#### *PETS*

*Keep pets away from areas with visible fire-related debris until you have cleaned the area. This will limit the amount of material they track into the house. If you need to let them out, wipe off their paws and fur with a damp towel when they come in. (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)*

To have to procure documents related to our own health and welfare in this manner from governmental organizations that are ostensibly charged with the public's health was galling. It would not have mattered if we had this document in a timely or open manner, however, as the document was not written for the type of fire that occurred. None of it was written from an evidence-based perspective. Like the actions of the Michigan Department of Environmental Quality in the Flint, MI water case, the public health and environmental authorities had made this an issue of personal, rather than corporate, responsibility.

Another document obtained through a FOIA request intimates that there was confusion behind the scenes about the health impacts but no department responsible for human health and safety took responsibility for getting the message out. One item that was particularly shocking was that the Area Health Department contacted O&G and, before the fire was out, the Health Department was told that there was nothing to worry about regarding toxicity. Statements in their notes include "normal fire situation", "contact O&G Environmental", and "nothing they [O&G] would consider toxic." (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)

In addition, from the same FOIA request, the initial conversations between the state and local departments show this conversation. There is a focus on soil contamination rather than the oil, soot, and ash that was found on and in homes in the area. In addition, there is an assumption that any pollution and toxicity ends at the property boundary, completely obfuscating the fact that the plumes from the fire stretched far beyond these borders.

- *Tires contain a lot of oil so burning tires are similar to an uncontrolled oil fire (1).*
- *Tire fire smoke is particularly irritating in part because of the sulfur dioxide generated from the sulfur in tires (1).*
- *Ash and debris at the site of a tire fire can contain elevated levels of heavy metals, volatile organic chemicals and semi-volatile organic chemicals (2).*
- *Soil at the site of a tire fire generally contains much lower levels of chemicals than the ash or debris (2).*
- *Residents can safely address tire fire ash and debris that has blown on to their property by washing visible material with biodegradable detergent and water (3).*
- *Residents should follow common sense precautions such as wearing gloves when handling fire debris and avoiding tracking ash into the house (3).*
- *Evidence suggests that tire fire ash and debris that has blown off site and settled on nearby properties does not create an exposure concern in offsite soil (4). (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)*

In a later attempt to address their oversights, there was a secondary argument in a response to my friend Ben that because this tire fire was not as big as others that have happened in the past, it must not have produced any concerning substances:



- *DEEP and local and state health officials have said that rubber residue from the first poses no significant health risk to area residents - especially if they follow guidelines for dealing with this situation.*
- *Those guidelines were outlined in a fact sheet prepared by the local health department (attached). The fact sheet advises residents to take all reasonable steps to clean their property, to avoid tracking rubber residue and debris from the fire into their homes, to wear rubber gloves when cleaning, and to wash their hands if they come into contact with any residue or debris.*
- *These are common sense guide lines that apply after any fire and when any type of debris is present in an area.*
- *There were no specific tests conducted on the rubber residue because of the body of knowledge that exists about residue from tire fires.*
- *The remains of tires that have been consumed in a fire can contain contaminants picked up during their use.*
- *But, given the relatively short duration of the fire in Torrington and the relatively small number of tires consumed, we do not believe there are levels of toxins of concern in the environment. There have been other tire fires around the nation that burned for weeks or even months with tens of thousands of tires involved, which did result in potential risks to public health and the need for more extensive clean up measures. Those were much different stations than that which exists in Torrington.*
- *We have not had any reports of impacts on aquatic life or wildlife as a result of the fire, but encourage anyone with evidence of or concerns about this to contact us at*

██████████

- *Cleanup efforts will continue. DEEP staff as well as crews from a contractor hired by O&G will be on site in the coming days and weeks. Cleanup will focus on the river banks and pockets of rubber residue that may surface in the river. Residents can also contact O&G for assistance in cleaning their properties.*
- *We encourage anyone who sees residue along the river or in the water to call us at [REDACTED], so that crews can be directed to those locations.*
- *DEEP staff says additional cleanup has taken place behind St. Francis Cemetery, an area that you expressed concerns about. (Holmberg v O&G Industries, Inc., Toce Brothers, Inc. and Liberty Mutual Group, Inc., 2017)*

This, of course, was very concerning to find later given we previously had trust in the Department of Energy and Environmental Protection and the Area Health District to help the community navigate issues of health and pollution. That trust had completely eroded by the time we finished receiving the FOIA contents and has permanently altered how we interpret information they distribute from water quality results to COVID-19 responses and metrics.

Finally, through an additional FOIA request, the Torrington Fire Marshal's report includes statements from workers at both O&G and Toce that there had been problems with the high temperature lighting in the days and weeks before the fire. It was noted that these lights were the most likely cause of the fire although the fire was officially documented as an undetermined cause. In addition, there were no sprinklers in the building, recommended for tire warehouses. The workers did not apparently specifically report the problems with the lights prior to the event and it may be likely due to the normative drift within their company's cultures.

“Having such an occurrence discovered on your watch is something no one wants as part of his

or her work history. And if one takes it upon him or herself to remedy the situation by going so far as reporting it?" (Beamish, 1999, p. 56).

My education and privilege allowed me a swift path to learn information and the skills I needed, as well as access to legal assistance, unlike some others in my community. In the end, due to political, cultural, and socioeconomic factors, I found myself powerless to prevail.

## Justice

*“How can environmental activists and storytellers work to counter the potent political, corporate, and even scientific forces invested in immediate self-interest, procrastination, and dissembling?”* (Nixon, 2011a, p. 9)

In this section I discuss my experiences in the justice system from beginning to 2018. I also discuss the ramifications of these experiences on me personally. Finally, I examine what this may mean for others in similar situations.

I do not cry often. I cried once each time I was diagnosed with cancer. I cried when each of my dogs died. I cried when my father died. In most stressful or emotional situations though I often use that same energy to push through, as unhealthy as that may be. However, in chambers at the end of 2017, I could not help but cry uncontrollably as the judge quietly, and not unkindly, told me what the outcome of our case was likely to be if we went to trial. As he handed me a box of tissues, it was there that I knew our fight was over and that we would need to walk away in order to preserve what we still had.

The justice system is challenging. Like a sudden medical situation, you only need to use the system if you do not have the ability to handle a situation yourself. Then you find yourself in a new world of language, norms, and expectations that require a crash-course to come up to any sort of working speed. My education was a benefit to me; I was able to use my research skills and deduction to learn much of what I needed to know quickly. However, it was still one of the most invasive and intimidating experiences of my life.

We hired an attorney on April 6th, 2014, upon the urging of one of my colleagues. I cannot overstate how chaotic everything seemed during this time but that was one of the better decisions that we made early on. It allowed us some breathing room and protection from being

bullied by our insurance company, which began early on. Neither Dan nor I had any experience with the legal system before and it was very intimidating. In all, our communications with our legal team alone included over 2000 emails and 53 meetings.

We could not afford a specialty lawyer but did find one who was particularly aggressive and, while not familiar with the science, understood what we were trying to do. The process went well early on and there was a lot of hope that we might see a favorable resolution. However, as delays were filed in court, interrogatories extended, depositions delayed, our hope waned regularly. The legal process became an emotional rollercoaster. For every forward movement, there would be almost joy at the prospect of an end. Then there was the inevitable letdown. We were assured along the way that this was typical.

My stress levels during this time skyrocketed. I was working full-time with part-time consulting, was going to graduate school (which would shortly be put on hiatus for the second time) and trying to care for my health. In addition, I was in a crash course of legalese, working with the terminology as I was learning it. An additional part of the stress came from a general feeling that, later in the process, we were often not being heard, or sometimes understood, by the legal system. Dan and I on the specific impacts of the legal aspect of our experience:

*Dan: "Well, I would say, stress and anxiety. Yeah. A lot of tasks to do and research to do, and records to gather. So it was like another job. And you had no idea how it was going to turn out, whether it was going to be successful, what our situation was going to be like. So, not only did you have to work hard at it, but there was no guarantee that there was going to be an outcome that even remotely was worth it."*

*Tara: "It is a situation where you get who you can afford, if you can afford anybody. I mean, there's nobody who would have taken this problem at all. So you get who can*

*afford and then it's, like, up to them and their interest level....The science for them was new....For whatever reason, like they were, they were of two minds with my rebuttal. You know, because I think they saw me as a teacher, not as the scientist. And how, you know, me saying, 'Here's your results, here's your interpretation of those results. Your interpretation is incorrect. Based on the science you're presenting, your interpretation is incorrect. Here's my interpretation of your results, which is in our favor. And hey, look, we have an expert over here who agrees with me.' But it took for [REDACTED] to be able to say 'yes she's right' for everyone to be like, 'Oh, she's right.'"*

*Tara: "I guess like that level of professional frustration, personal frustration, where I'm a doer and I was completely out of control in that situation."*

*Dan: "Yeah, except for the fact that you day to day you were the only one that did have control....You were the only one doing anything, doing any research, understanding the problem? And then understanding the argument. I mean, you were not only feeding the science and the information, you're feeding the arguments. Right?"*

The crux of our argument was that there was a tire fire and it damaged our bodies and our home. It was a pretty simple argument. The Fire Marshall declared that the cause of the fire was not able to be determined (although it was stated there was a *likely* cause). The defendants then took this to mean no responsibility on their part.

*Dan: "Everybody knows there was a fire, right? The fire was in your building. We know what burned. We have pictures of burned tires. And we know which way the smoke was blowing. And we know what's in a burning tire. It makes no difference if you want to argue that the rags...you couldn't set a tire on fire. But you know, we had started at that point to look at what could have caused it like were they negligent because the lights*

*were the wrong kind because they didn't maintain them properly supposed to cycle them on and off, right? Every so often.*

*Tara: And there were conflicting reports on what happened that morning about who was in who saw what, and who had cycled or not cycled the lights and everything else. And again, beyond the scope of what we were talking about. There was a fire like that is not that cannot be denied. And then the case is well what could you have done to prevent a fire so that you didn't bother your neighbors? And there were lots of things they could have done...the sprinkler system for one.*

*Dan: "But again, that's the situation we're in, I think, which is probably the most germane thing for this discussion is the situation we were in was...that was the lawyer we could get? Yeah. Not only because we can afford her, but I got the sense that nobody else wanted that case. Yeah. Because what law firm in Torrington is going to want to go up against the biggest employer in town. And be like, 'Well, yeah, we're sure we'll do it for half a million dollars.' Right. Like, we don't have half a million dollars. But you know, we still more than anybody else in the neighborhood had the ability to get legal representation."*

*Tara: 'Remember when we talked about representation, across the street we went to go to [REDACTED]. And he didn't want any part of it. He just wanted the inside of his house cleaned. And that was it.'*

We often wondered what role the community position of the defendants played in the entire legal process. If O&G and/or Toce had instead been much smaller companies without the political capital and legal connections that they had, how different our case may have been. These two corporations, especially O&G, hold a great deal of weight in the community and the

owning families are well-known to all for local philanthropy but also for their business and industry ties (O&G, 2011). In addition to the many other reasons for someone to not get involved in a case such as this (e.g., socioeconomic, political, time, etc.) going up against one of the largest corporations in the region may have been considered as a reason to stay quiet.

I, on the other hand, did not have any issues putting myself into the public eye. I am already a public entity with former students recognizing me nearly everywhere I go. However, being a public speaker and figure put me in a bit of an odd position throughout the legal process. I was fighting a somewhat public fight but could not talk about it with anyone on order of my attorney. We were questioned about it a great deal and found that others would get frustrated with us when we could not share the details.

One process that I wished I could share with friends, family, and the larger community at the time is the minutiae of the legal process but we were advised against it. The paperwork, meetings, and carefully constructed statements that are the bulk of what makes up a case. We never once saw the inside of a court and only once spoke to a judge. Everything else was done through clerks and through orders from a judge online. While stressful, the largest requirement of this process was hours and hours of time, which I realize not everyone impacted by slow violence has. This specifically required me to take days off from work to attend meetings with my attorney, to prepare documents, or craft emails. Not all who would want to pursue justice have this type of time available to them. In addition, the internet, monthly attorney fees plus ancillary expenses, and reliable transportation were all essential. Again, all expenses that are out of reach of some impacted by toxicological violence.

The three interrogatories, lists of often personal questions from the opposing attorneys, were a challenge and took months to complete. These depositions were often put off month after



month by opposing council, extending my own expenses and the time devoted to the case. Each defendant has the right to gather information, however, it often felt as though I was the one on trial, not them. They were often internally repetitive, and duplicative of each other; each interrogatory often asked the same question in multiple ways.

However, I was able to approach those as I would a research paper or work project. They involved gathering information, deciding on voice and tone, and answering only what was asked in the question. This took assistance from my attorney to make sure that the answers were written in such a way that they were not only truthful and provided the necessary evidence but were not combative (as my feelings were at the time).

Some questions were short and easily answered: "State the date on which you first learned that hazardous substances might have been present on the 96 Albert Street, Torrington, Connecticut premises and describe how you learned about the alleged presence of such hazardous substances." My answer, "4/3/2014 when the Plaintiff saw billowing black smoke coming from the warehouse at 96 Albert St."

Other questions were more in depth and invasive given that these are public documents, "State whether you contend that your health has been impacted by exposure to a hazardous substance caused by the incident alleged in the Complaint. If the answer is "yes", (a) describe the impact, (b) set forth the factual basis for your contention, and (c) identify any and all documents relied upon or referred to in answering this Interrogatory." My answer, "Yes. See complaint [REDACTED]. Plaintiff suffered asthma, difficulty in breathing, headaches, dizziness, throat chemical burns, blurred vision, secondary infections, and suffering, both emotional and physical, for months to years following the fire. Exposure to the soot, ash, and chemicals on the property exacerbates asthma and other health issues and medical professionals strongly recommend that

the Plaintiff not return to the property to maintain her health. Medical records related to the tire fire are attached. In addition, over the past two years, the Plaintiff has suffered more respiratory infections and one bout of pneumonia.”

Finally, some questions opened the door for us to state our case directly: “Set forth the factual basis for your allegation in paragraph 39 of the Complaint that, "O&G intentionally failed, after reasonable notice and opportunity, to take reasonable steps to abate the nuisance at 94 Albert Street or to protect Holmberg"; and identify any and all documents relied upon or referred to in answering this Interrogatory.” My answer, “O&G was negligent in that it knew or should have known that permitting a tenant to store flammable and hazardous materials as well as storing their own flammable and hazardous materials in a building with metal halide quartz overhead lighting fixtures with sodium mercury high intensity discharge lights and an inadequate fire suppression system was an unreasonable danger. O&G knew of the presence of the lighting system in the building and as the owner of the building it knew or should have known of the risks these lights presented; however, despite this knowledge they permitted the storage of flammable and hazardous material in the building. Plaintiff reserves the right to amend these answers when expert reports are received.”

Most of the questions asked required documentation. Thankfully, I had been organizing all of the materials for our cases and insurance claims from the first day in designated binders and legal boxes. I did not do this in preparation for litigation but rather it became an almost obsessive compulsion to organize.

While the interrogatories took time, the most stressful and degrading legal experience was the deposition which took place in the fall of 2016. I knew vaguely what a deposition was from watching movies and television but their depiction on the screen is very different from the

real world. Depending on the context, depositions can be short and sweet or a marathon. Mine was the latter. I know the attorneys needed to represent the interests of their clients, but I was unprepared for the types of questions that would be asked, the psychological strategies that would be used, and the legal inability to ask questions of my own attorney during the process. Even though I was the plaintiff, I was interrogated for six hours about aspects of my professional and personal life as if they had bearing on the case.

For example, here was a line of questioning on whether I knew about the contents of the warehouse before I bought the house (*Holmberg Deposition for Holmberg v O&G Industries, Inc., Toce Brothers, Inc. And Liberty Mutual Group, Inc.*, 2017):

*Q. Prior to purchasing the house did you do any sort of research on my area that you were buying it?*

*A. I did.*

*Q. What kind of research did you do?*

*A. I was looking for somewhere closer to work from where I was living previously.*

*Q. How far is this from work?*

*A. Fifteen minutes, max. I was looking for a community I could be part of. I was looking for some more walkable to events, to places that I could frequent. And I was looking for something that was being revitalized, that was important to me.*

*Q. When you say “something that was being revitalized,” do you mean the town or the house?*

*A. The town.*

*Q. At the time you purchased, did you live in or surrounding or abutting properties?*

*A. I had frequented it or had gone with my realtor to that neighborhood several times.*

*Q. No concerns that you were— strike that. You didn't have any concerns that you were next to a warehouse?*

*A. At the time I purchased the property, I did not know what was in the warehouse.*

*Q. Did you ask your realtor?*

*A. No.*

*Q. Were you concerned with what was in the warehouse?*

*A. At the time, no. (Holmberg Dep. 15:22-17:2)*

And another questioning the validity of my health claims (*Holmberg Deposition for Holmberg v O&G Industries, Inc., Toce Brothers, Inc. And Liberty Mutual Group, Inc., 2017*):

*Q. You told Attorney [REDACTED] that by the winter of 2014-2015 your asthma pretty much returned to baseline from what it had been before the fire?*

*A. No, not to baseline. It took a while but it had tapered off so that I didn't need the medications as much as I needed before.*

*Q. Roughly, when was it you returned to baseline where your asthma was pretty much the way it had been before the fire?*

*A. I'm still not to that point yet. I'm still having to use my medications more than I was before the fire.*

*Q. How do you know that's due to the fire?*

*A. I was well controlled for years before the fire and now I'm not.*

*Q. That's the only basis for your assumption that your exacerbation of problems now are due to the fire?*

*A. All of my—the reaction that I had after the fire lasted for weeks. The asthma that I had lasted for months. It took me months after that to start to feel normal again. And I'm*

*still not back to where I was before. All of that changed on April 3rd, 2014.*

(Holmberg Dep. 159:2-25)

Other lines of questioning were rapid-fire and jumped from topic-to-topic with the intention of throwing me off-base. For example, within 10 lines of questioning, one attorney went from asking what we knew about the stacking of tires, to whether I owned a kayak and where we went kayaking, to the name of the realtor I used in 2005. Other subjects included in the deposition were if we worked out, if I was a diabetic, my professionalism as an educator and environmental scientist, why we had not painted our house before the fire, and why we did not just give or sell our contaminated items. Each attorney also wanted me to weigh in on who I thought was most responsible for the events of April 3, 2014.

Logically and academically, it was interesting to dissociate myself from the process during and watch the defense attorneys' tactics. They were friendly and then aggressive, cooperative then cajoling, keeping me off balance. On a personal and emotional level, I found the deposition utterly exhausting, infuriating, and depressing. Exhausting in that it never lets up: for six hours there were only two, fifteen-minute breaks with constant questions from a variety of attorneys the rest of the time. Infuriating because my professional experience was questioned, my personal life was put into the public record, and while I knew that this was their job, I was angry that they could go home to their lives after laying mine out on the table for dissection. They set up a defense based on my past decisions and life journey. However, I had nothing to hide, and we had done nothing wrong. We had been living our lives and wanted to be made whole again; in the end we were being judged for the way we lived, where we lived, and what we did. This was jading and depressing.

*Tara: "I don't feel I knew, really what to expect. I literally was going off of what I saw on TV, and then movies."*

*Dan: "Well, you understood who they were and what their position was..."*

*Tara: "I have to say that first guy that was so nice at the beginning, like it, when you're in that situation, it does throw you off, because you're expecting someone to come at you like a shark. And he came at me like, he was a friend, and he cared and everything else. And then halfway through, he turned the tables, and it was like, it's so jarring. And it was horrible. And you're like, Why are you attacking me? You were just like asking me questions and listening two minutes ago. And now, all of a sudden, you're attacking me as a person, and you're attacking my core as a being and you're attacking what I believe in... I get it. I'm the plaintiff. But I'm the victim. Talking about how "dirty" we were. Like that we were dirty people and then it made me mad, and you know, I usually don't get mad, right. And so having to deal with the emotion of anger, which I don't normally have to deal with, under stress. And then trying to remember things, as they happened, was a really horrible experience."*

For those without prior experience with insurance companies, who are intimidated by language they are unfamiliar with, for whom English is not a first language, and/or have no background in science, the use of language by the insurance companies may be one of the first hindrances for justice. In addition, if someone trusts that their insurance company is looking out for them and their safety, they may believe the institution when they say things like, "we did you a favor" and "there's really nothing to worry about", as they said to us during our claim. The "did you a favor" quote is particularly galling as it was in reference to the cleaning that was done. This is standard practice after any type of fire, but the insurance company made it seem

like they were doing it out of the goodness of their collective hearts. Someone without knowledge of the toxicological risks or their rights under their homeowners or renters' policy (should they be fortunate enough to have one) may not know that there are additional steps that can and should be taken.

I am unable to discuss the resolution of our case. Suffice to say, neither we nor our human or natural community achieved justice in years following the initial incident on April 3<sup>rd</sup>, 2014. The slow violence of the tire fire and subsequent events have permeated every part of my life since that day, changing and shaping me, bodily, psychologically, and financially. However, this dissertation and other means of communicating these events and their impacts on us and our community can help to shed light on what can happen to an individual and a family during the experience of slow toxicological violence, addressing a previously noted gap in the research.

## CHAPTER V: SUMMARY, IMPLICATIONS, AND CONCLUSIONS

### Introduction

*“In an age when the media venerate the spectacular, when public policy is shaped primarily around perceived immediate need, a central question is strategic and representational: how can we convert into image and narrative the disasters that are slow moving and long in the making, disasters that are anonymous and that star nobody, disasters that are attritional and of indifferent interest to the sensation-driven technologies of our image-world?” (Nixon, 2011a, p. 3)*

Stories are important. “We use stories to make sense of what we have experienced, contextualize events within larger experiences, and personal and public systems of meaning, and pass on lessons learned to others” (Seeger and Sellnow, 2016). In our fight for justice, I did try to utilize the traditional representations of disaster to our advantage in telling a story: media attention and representation on fast time scales (Rice, 2016). However, the community’s attention quickly waned, and our story became nonvisible except to those experiencing it. In addition, due to the nature of the contamination from the tire fire, the geographic bounds of the disaster were already ambiguous. Ironically, it is due to the speed of the legal system and the actions of the responsible actors that changed the scale of time to that of incremental onset. By slowing down the legal process to their advantage, the defendants created a slow violence event. By doing so, the impacts were deeper than if there had been a quick resolution: “slow violence is a deferred form of brutality, but for communities who live with that deferral, the attritional consequences of violence can become noticeable, vital, and manifest” (Davies, 2019, p. 11)



## **Research Questions and Emergent Themes**

*The impacts of slow violence...resonate with Churchman's (1967) notion of 'wicked problems; they are often attritional, disguised, and temporally latent, making the articulation of slow violence a representational challenge. (Davies, 2019, p. 410)*

In this section I will discuss how each of my research questions were addressed by my phenomenological autoethnography. In addition, I will explore the emergent themes as they connect to the literature. Finally, I will address the implications for practice and future inquiry as they relate to my findings.

### **Research Question 1**

My first research question (R1) asked 'how do my lived experiences reflect Nixon's (2011a) theoretical concept of slow environmental violence, including incremental onset, ambiguous boundaries, and nonvisibility?' I will address each of these factors separately.

#### *Incremental Onset*

Incremental onset refers to the types of violence that elicit the "slow" in slow environmental violence. It is "a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales" (Nixon, 2011a, p. 2). This violence works on different scales of time than those traditionally under the umbrella of 'violence', that which is deemed hot and fast by Christian and Dowler (2019). It requires a "temporal gaze" that reframes concepts of cause and effect (Adam, 2000, 1998). It is not meant to produce a duality with those events that are acute with hard starts and definitive beginnings and endings but instead to bring to light those types of violence that did not fit the traditional definitions of the past.

Toxicological events are an excellent example of the type that often fit within this lens. There may or may not be an acute precipitating event. However, toxic events are notorious for stretching out for long periods of time beyond the point at which they begin to cause harm and are noted. It is not through the initial scientific testing of an event that the true harm comes to light but, instead, the “slow observation...through which polluted communities understand the lived reality of persistent environmental threats” (Davies, 2019, p. 1538).

Like those in Vorbrugg’s (2019) ethnography on those living in rural Russia, we watched the incremental decay of our property: “ruins are being employed as symbols of very particular absences” (p. 457). What was once a solid ‘fixer-upper’ became tired, overgrown, and decrepit over time. To watch something that you took such pride in begin a slow slide towards ruin was not something I would want to witness again. “The tragedy expressed here is less that of abandoned ghost villages...but rather of people living on beside and amongst the ruins of their former lives” (Vorbrugg, 2019, p. 457).

We have lived with the ramifications of our toxic exposure from the initial fire and the months and years afterward. Even while living in a different house, we still had to visit our property to document damages, maintain from break-ins, and periodically check on the status. From our shoes we brought contaminated soil back to our apartment and carried it on our clothes. My health impacts were sudden but continuous. They were initially acute but then became chronic. It is true in some respects that ‘the dose makes the poison’ but I do not know what our exposure was over the days and years and never will. It also negates the impacts of epigenetics and multiplicative impacts of toxins over time.

Even before the tire fire, there were actions and inactions on the part of the owners of the building that burned that could have prevented all of what was to come. This negligence is a part

of the incremental onset. Each step in the process, each safety procedure not fulfilled, every maintenance protocol not followed was one in a long chain of failures that led to the conflagration that inevitably changed our lives.

In addition to the toxin exposure, the legal and insurance challenges took years, draining our time, energy, and resources. This type of long, slow, slog is demoralizing. It is difficult to maintain any sort of hope that justice will be served. It took a toll on my health and on my body, leading to some of the diagnoses I have today.

### *Ambiguous Boundaries*

Slow violence is a type of structural violence. It is “co-constituted at sites of body, city, region, and global simultaneously” and “is always situated in historical and geographical contexts that affect and enable it” (Pain and Cahill, 2022, p. 361). While it is embedded in place, it is important to consider that the boundaries of this violence are often geographically ‘ambiguous’. In addition, the violence may impact many different spaces at the same time. They are,

multi-scalar and multi-sited, part and parcel of daily life, social relations, culture, and institutions. Perhaps we might imagine slow violence creeping, or even bleeding through spaces, through families, through soils and land, through urban fabrics, through economic decline, through austerity and disinvestments, impacting those communities the most who are already experiencing long histories of structural inequality. (Pain and Cahill, 2022, p. 362)

Many marginalized communities are considered ‘sacrifice zones’ or fenceline communities (Lerner, 2010). The term comes from the United States Government’s “National Sacrifice Zones” deemed highly polluted with radioactive material as a result of activities from

the Cold War. These areas and more, especially those resulting from petrocapiatalism, are those that are considered by those in power as a reasonable loss for the continuing of a capitalist economy and furthering of commercial and industrial ventures. A form of environmental racism, the affluent and politically connected avoid the impacts of these areas at the expense of the marginalized.

In Torrington, CT, this is clearly seen in the south end, where housing is co-mingled with grandfathered industrial warehouses and plants such as quarries (owned by O&G) and commercial ventures such as auto repair shops, lumber retailers, used car dealerships, and similar businesses. This contrasts greatly with the wealthier (and predominantly white) east side of town where there are strict demarcations between industrial, commercial, and residential neighborhoods. Davies (2019) notes that this is part of the structural violence embedded in communities and this is “environmental risks are commonly placed in the path of least resistance, near communities with the smallest reserves of political, economic, and social capital” (p. 8).

Given this blending of residential, commercial, and industrial zoning in the South End, the bounds of toxicity do not end at a property’s boundary line. While the Area Health District underlined “the site of the fire” in their documentation to Ben, their position was negated by the clear evidence of contamination throughout the neighborhood. The plume of toxins was seen 25 miles away in Naugatuck, CT. This nebulous boundary creates a challenge for those studying events such as the tire fire of April 3rd, 2014, from a purely toxicological point of view. Toxins may have been deposited in pulses in some locations whereas other places may have received little. In addition, some individuals are more susceptible than others. Confounding this is the time factor for repeated exposure following the initial event.

There are also impacts beyond the direct site of the initial tire fire and our neighborhood. In addition to the formal entities involved such as the local and state government agencies, these events affected my family members in Minnesota who helped us psychologically in the first months as we tried to recover. Dan's family, spread throughout New England, also rallied to help us with gift cards and moral support. My physicians, located throughout Connecticut, found themselves having to read up on the toxicology of tire fires and decide how this would integrate with my treatment plan. All these lead to ambiguous boundaries of impacts.

Finally, the real experiences of those in the neighborhood were not heard. On numerous occasions it was reported that there were no injuries and that no one sought medical care from the tire fire. This was untrue. I had been seen at urgent care and this was reported. In addition, there was a discrepancy between what I was finding in the literature and what was being stated to those who reached out to the Area Health District and the CT Department of Energy and Environmental Protection. There was not the staff and/or expertise in either of these agencies to deeply research the possible impacts. Unfortunately, this is quite similar to other instances of slow toxicological violence where:

...informal knowledge is regularly overlooked in cases of environmental risk, while exclusive scientific expertise is often required to translate pollution into legible or legal forms...toxic geographies therefore remain disputed and ambiguous spaces, and the violence of these landscapes will continue to be felt by their inhabitants. (Davies, 2019, p. 13)

### *Nonvisibility*

The final hallmark of Nixon's (2011a) theory of slow environmental violence is that of nonvisibility (Rice, 2016). While research has supported this considering the dearth of media and

other forms of representation, recent scholars have noted that nonvisibility is more about power than about the lack of recognition of a pervasive problem (Cahill & Pain, 2019; Davies, 2019; O’Lear, 2018; Rice, 2016). It is also noted that others have critiqued Nixon’s assumed vantage point as being one from a position of power when writing about nonvisibility (Jones, 2019). This nonvisibility is an issue of political capital, those who are in control of narratives and the dominant paradigm of the community (O’Lear, 2016, 2018). As a result, the individuals and communities most impacted by slow environmental violence are marginalized even further. This results in “a politics of indifference about the suffering of marginalized groups [that] helps to sustain environmental injustice, allowing local claims of toxic harm to be silenced” (Davies, 2019, p. 13)

Even in the realm of critical geography where slow environmental violence is often studied, there is a lack of individual and community story due to the scales and empirical data that the fields often rely on as evidence (Davies, 2019). As noted in both the temporal and spatial sections, the nebulous nature of toxicological violence can be troublesome to represent holistically. This may also be due to the traditional specialization and workflow of academia which limits the timeframes and geography of “process, interactions, and effects” (O’Lear, 2018, p. 95). Finally, researchers may not detect slow violence if the geographic or material scale of the violence is small. The impacts themselves may be large but “the very materiality of many toxic substances – such as radiation or a variety of industrial chemicals – remaining beyond the grasp of human senses or understandings...in this sense, pollution produces its own agnotologies” (Davies, 2019, p. 10). In other words, for those who study slow toxicological violence the long-term ramifications may continue to remain hidden due to an inability to fully encapsulate the problems.

However, many of these instances of slow environmental violence are not invisible to those who inhabit the polluted spaces and experience the impacts. It is counterintuitive to assume so, given that these are people's homes and where they spend their time. They may be clearly visible to those who have already been discounted by society (Davies, 2019; Kramarz, 2022; Vorbrugg, 2019).

In some cases, individuals or grassroots organizations move to demand change and recompense (Nixon, 2011a; Lerner, 2010; Kramarz, 2022). These actions increased in the 1980s with the filing of a watershed lawsuit, *Bean vs. Southwestern Waste Management* (Bullard, 1996). This led to the production of a series of environmental justice studies which noted that there was a "clear and unequivocal class and racial bias in the distribution of environmental hazards" (Mohai & Bryant, 1992). As Lerner (2010) states,

After breathing in large volumes of polluted air or swallowing countless gallons of poisoned water, some of them finally take action: organize their neighbors, speak up at public meetings, research the health effects of their chemical exposure, invite the media to report on the contamination problems, and kick up a ruckus. (p. 1)

I was one of those individuals. Through my education, I knew of environmental injustice and environmental racism but, as far as I knew at the time, it had not impacted me personally due to my position and privilege. I thought I was viewing these issues as I studied them from the outside in only from a position of privilege, but I was wrong. I was living in a system of marginalization but did not yet understand how deeply.

My experience transformed much of who I am and how I view the world. As a human in a complex society, I have an idea of Self; but I am less shaped by the factors that were important to me prior to 2014. I am less concerned with the "Self" that others want me to be but that which

I strive to be. I do not state this naïvely; because of my transformative experience, I am interested in the reflexive process of identifying how “cultural canon, socioeconomic structures, ideologies and beliefs about ourselves, and the practices they support” affect learning in crisis and vice-versa (Mezirow, 2000, p. 8).

An example of this type of transformation happened upon reflecting on the legal process. One of the lines of questioning during the interrogatories and depositions was the following: ‘did you know what was in the warehouse before the fire and, if so, why did you choose to buy that house?’ It struck me at the time as an unfair question and one that led to victim blaming. Now I see it both as those and a way to intimidate, to embarrass. To try to embarrass me about where I lived and how I lived. To intimidate about my community and why I was living there. All it did, however, was make me more resolved to see the case through. It also, ironically, led me to be prouder of what I have been able to accomplish in my life given the challenges I have faced than if I had not been pushed to answer questions along those lines.

While we did not see justice, we did invite the media, we did kick up a ruckus for a time, and we tried to organize our neighbors. The consequences of the tire fire and its attendant injuries to our home, selves, nature, and community were not invisible to us. My phenomenological autoethnography is a narrative that documents the deep impacts that wove through our lives and continues to do so.

### **Research Question 2**

My second research question (R2) asked: ‘How did my lived experience inform my understanding of how the sociopolitical, cultural, historical, and economic forces led to this event and/or its impacts?’



The neighborhood I lived in during and before 2014 was marginalized and continues to be to this day. From the demographics, it is economically depressed, is close to being a food desert, and has little in the way of community revitalization. Most of the revitalization in the town from the time period of 2014 onward has been in the downtown region for small and large business owners (Torrington Downtown Partners, 2022). Except for two other property owners who filed small insurance claims for exterior power washing, I know of no one else in the neighborhood who moved forward with any insurance claims or legal action. When we spoke to one neighbor, he wanted nothing to do with a legal case, even though he said he had similar contamination to us inside of his home. Others never responded to our attorney's request for a consultation. It is not hard to see why. There are powerful economic, political, and social forces at play for this community. "Political actors help frame what constitutes the disaster and how it ought to be addressed" (Park, 2022a, p. 3). It is easier to keep your head down, not attract attention, and get by than to risk the ire of one of the most powerful companies in the state or the municipal government who works closely with them.

Relatedly, while it is difficult to know the extent of political involvement of the actors of April 3rd, 2014, due to the opaqueness of political finance laws, it is noteworthy that there was a lack of both municipal and corporate response even before our lawsuits were filed. It may be that this is due to the limitations placed on the municipal government due to the "laws, governing bodies, and culture" (Park, 2022a, p. 3). However, it may also be that there was blind spot in recognizing the impacts of the event. This could be avoided in the future if the City of Torrington "recognizes their own contribution to disasters, incorporate multi-disciplinary knowledge of disasters, and incorporate localized understandings of disaster and adaptive strategies to respond to them" (Park, 2022b, p. 21)

There was consistent messaging to the media from the Torrington Area Health District, the Mayor's office, and others that no one was harmed in the event or afterward, even though they had documentation from my attorney. Even while it was incorrect, the Area Health District never sent out the document to the neighborhood about how to handle debris and continuing contamination from the fire. While many turned to the Area Health District for information on the toxicology from that fire, that was not in their areas of expertise (Torrington Area Health District, 2022).

From the FOIA that was filed, they, in turn, requested help from the CT Department of Energy and Environmental Protection (DEEP). Again, in looking through their website, tire fires and the associated toxicology is not in their area of expertise either (Connecticut Department of Energy and Environmental Protection, 2022a). Both turned to some other reports by some state agencies but did not cite any scientific toxicology literature on the burning of tires to come to their conclusions, nor did they utilize the actual, physical impacts that we had experienced and reported. By not relying on the science for even the initial event, their conclusions were erroneous and put many people at risk.

In the end, the Area Health District did not fulfill its mission: "To promote and protect the physical and environmental well-being of the citizens of the Torrington Area Health District through direct services, wellness and promotion programs and active support of community efforts" (Torrington Area Health District, 2022) The DEEP has a widely varied, and somewhat contradictory, mission: "The Connecticut Department of Energy and Environmental Protection (DEEP) is charged with conserving, improving and protecting the natural resources and the environment of the state of Connecticut as well as making cheaper, cleaner and more reliable energy available for the people and businesses of the state. The agency is also committed to

playing a positive role in rebuilding Connecticut's economy and creating jobs – and to fostering a sustainable and prosperous economic future for the state.” (Connecticut Department of Energy and Environmental Protection, 2022b). Interestingly, the CT DEEP does not include human health in their mission, but they were seen as the entity which would have had the ultimate say in the toxicological impacts of the tire fire.

Accountability is still an uphill battle to be addressed in the arenas of environmental justice. Lerner (2010) noted that it is very difficult to achieve desired outcomes in cases of slow toxicological violence. In addition to the blame placed on the victims by the responsible actors, the media, and society, finding attorneys willing to take on such cases and devote the time necessary for research and arguments are a significant challenge. In some cases, the positive result is to decrease the number and severity of the toxins the community is exposed to. In rare cases, a source is closed, demolished, or residents relocated.

This is tied closely to the idea of resilience, a concept that comes up often in studies of disaster risk reduction and other fields such as policy studies, child and adolescent development, healthcare, and more (Aburn et al., 2016). Aburn et al. (2016) found that in a review of 100 empirical studies, there were 75 different definitions of the term ‘resilience’. From there, they were able to discern five key concepts common in the literature where resilience can mean, ‘rising above to overcome adversity’, ‘adaptations and adjustment’, ‘ordinary magic’, ‘good mental health’, and ‘ability to bounce back’ (Aburn et al., 2016). Some definitions included more than one key concept. They note that not everyone can be resilient, nor can they be vulnerable, all the time.

I have been told on many occasions throughout my life that I am resilient. However, that means different things to different people. Am I resilient because I have survived my health

challenges and found coping mechanisms to be able to still function in society? Or, am I not truly resilient because I have power and privilege, and therefore, there are systems in place that have assisted me without me even realizing it? In addition, is there a reliance on individual and community capacity for resilience by systems to continue with actions or inactions that contribute to slow violence?

Marginalized communities are not homogeneous, and my neighborhood was no different. The impacts of slow environmental violence are not the same across the community. Regardless, as Kramarz (2022) notes, there are impacts for all:

Slow violence achieves disenfranchisement through exhaustion, fear and shame in addition to material displacements in the form of physical dispossession from land, environmental and human health degradation, and dependent development (Kramarz et al. 2021). People who live in sacrifice zones highlight psychological dimensions.

However, this experience is not limited to the poor. The emotional toll of slow violence limits the agency of people who may enjoy other kinds of capacities, including economic resources. (p. 97)

From this, a typology of vulnerable subjects was proposed by Kramarz (2022) for communities that have experienced slow violence. The first of these Scenarios is Discounted and Invisible Subjects where the environmental shock is slow and the capacity to respond is low. The second is Subjects of Doubt and Stretched Assets where the environmental shock is slow and the capacity to respond is moderate to high. Scenarios Three (Subjects of the Environmental Movement) and Four (Subjects of Significant Risk Reversals) both involve fast environmental shocks with Scenario Three having low capacity to respond and Scenario Four involving high response capacity.

Due to the activities of landlords and some property owners, as well as my own quest for justice, I believe our community most closely resembles Scenario Two: Subjects of Doubt and Stretched Assets. In this scenario, a community is impacted physically, emotionally, and financially by slow violence. Uncertainty is rife and there is fear about the long-term impacts. Without outside help or some watershed moment of organization, instead of coming together to advocate, the community is stretched by doubt and finances into their own experiences. Many relocate and the community is splintered.

The socioeconomic and political factors may best be understood through normative drift. In Beamish's dissertation (1999), the role of corporate culture is strongly skewed towards not reporting or underreporting issues that may lead to polluting events. This is seen in the Guadalupe oil spill in California where "the long-term nature of the problem, in retrospect, promoted organization-wide complicity and decreased the chances of self-report occurring once the spill became an obvious problem" (Beamish, 1999, p. 53). There were these same forces seen behind the scenes prior to the tire fire on April 3rd, 2014 and after. On a political level, our city government and public health departments had little to say publicly about the matter. There were no efforts to reach out to individuals or the community. It is uncertain as to why this may be given the size, scope, and publicity of this event.

### **Findings in Context**

This dissertation is a phenomenological autoethnography of my own experience of a slow toxicological violence. Resulting findings from this study support that the events of April 3rd, 2014 - 2018 were an example of slow toxicological violence. Slow toxicological violence is defined by three facets: incremental onset, ambiguous boundaries, and nonvisibility (Nixon, 2011a). My research has indicated that due to the type of slow violence I faced, my experience

was ‘incremental and accretive’ (Nixon, 2011a, p. 2). In addition, the pollution and deep impacts (economic, political, biological, etc.) were not limited to the property lines where the initial and subsequent events took place, supporting the ideas of the ambiguous boundaries. Finally, while nonvisibility is a continuing problem in the larger society regarding the impact of toxins on marginalized communities, this phenomenological autoethnography has given voice to my individual experience within the literature and recognizes that slow violence may take place on the scales of a neighborhood (Cocean et al., 2020; Mazzucco et al., 2020).

Limitations of this study include the inability to generalize the findings to other instances of slow environmental violence. It is therefore somewhat limited in its conclusions, but it may be transferable (Mendez, 2013). It may also be difficult for some to reckon with the slow toxicological violence that may be present in their own lives. However, I have been able to demonstrate the application of Nixon’s (2011a) theory of slow environmental violence to a lived experience of a toxicological and its attendant injuries (corporeal, financial, psychological, etc.). As with my lived experience, slow toxicological violence can begin with an acute event and morph into something nonvisible for outsiders with nebulous boundaries of time and space. This is due to the action/inaction of responsible actors and cultural, socioeconomic, and political structures. This narrative provided a ‘thick description’ to help others become aware of some of the realities of living through such events and the considerations victims must weigh.

The stresses caused by such a slow toxicological violence may be modest over the whole of a large community but there may be subpopulations experiencing great impacts (Edelstein, 2004). In addition, “contamination involves a complex array of stressors that arise...at different points spatially and temporally” (Edelstein, 2004, p. 31). Toxicological exposure is stigmatizing for many reasons and is not well understood by quantitative or qualitative research.

The results support that those impacted by slow environmental violence have an expertise that may be missed by researchers. This study addresses the gap of first-person voices in the literature through phenomenological autoethnography, a unique methodology as applied to slow environmental violence. In addition, this research provides academics, community groups, and others working in slow environmental violence and anthropogenic disasters insights into the dynamics and personal impacts of a specific toxicological event.

This research used slow environmental violence and phenomenological autoethnography to provide an insider's view of a slow toxicological event and its attendant impacts on my experiences of home, self, nature, community, and justice. The dominant political, socioeconomic, historical, and cultural forces were centered as a background to provide context for the events and findings of the study. Recommendations and implications for practitioners in environmental justice and scholars in slow environmental violence are included below.

### **Recommendations and Implications for Practitioners**

Environmental justice is elusive in many cases of slow toxicological violence. Much of the violence originates in the structural inequities that predate any contamination. It has been somewhat accepted by society as a whole that these experiences are one of the costs of a modern society. It does not have to be so.

Environmental justice advocates have focused on structural and environmental inequality for some time, noting that there is often a 'slippage' of slow violence from structural to environmental (Davies, 2019). Justice in this sense is taken to mean a capabilities approach, where well-being is the goal for all (Edwards et al., 2016). For slow toxicological violence, and other forms of slow environmental violence, pairing this approach with another form of justice,

disaster justice, may help to bring communities closer to the goal of avoiding violence in the first place or being made whole if they experience it.

Structural inequities cause or complicate all disasters. The best responses to those disasters are those that also address structural justice (Eda, 2015). Disaster justice, coined by Verchick (2012), bridges the gap between social/environmental justice and efforts into disaster preparation and response on the other, “reclaiming the grassroots, transnational, decolonial, anticapitalist, antiracist, feminist, queer, and accessible knowledge systems” (Eda, 2015, p. 96). This includes using many of the strategies and best practices of environmental justice paired with those around disaster mobilization and response, including information access, internal organization for response and recovery, and the recognition of the importance of pre-existing and new social networks in disaster.

Disasters involving slow toxicological violence will continue to happen as industry and government continue to grow economies through resource intensive methods. Some environmental injustice is unavoidable (Davies, 2019). Thus working with communities such that they are “not only physically resistant to disasters but also attentive to social and cultural conflicts that may exacerbate the damage of disasters” (Eda, 2015, p. 105). Eda’s work focused on disasters involving earthquakes, and much of the field focuses on climate change and other forms of disaster at natural-anthropogenic interfaces (Greenfield, 2022; Lukasiewicz & Baldwin, 2021; Verchick, 2012). However, practitioners of slow environmental violence and environmental justice might consider broadening their conceptual framework to include disaster justice to lessen impacts or prevent instances of slow environmental violence altogether.



### **Recommendations and Implications for Future Scholarship and Research**

The Academy is limited and limiting, where not all voices are heard (Pain & Cahill, 2022; Smith, 2021; Wilson, 2008). The field of slow violence is relatively new and is still finding its footing in terms of ‘representation and positionality’ (Pain and Cahill, 2022, p. 363). It is yet unclear how it is decided who is asking the questions. Whose stories are told, by whom, and why? “If we want to uncover hidden and multi-sited violences, and uplift those forms of resistance that may also be concealed, an epistemological shift is needed” (Pain and Cahill, 2022, p. 363).

One line of focus that may assist in this shift is that of ‘Research Justice’ (Eda, 2015). This includes an ‘opening up’ of Academia; making “academic and other authoritative knowledge relevant and accessible to those who never had access previously, despite being the subject of research” (Eda, 2015, p. 106). This involves democratizing research, reducing barriers such as paywalls, and listening to communities (Eda, 2015).

I was able to access the academic articles I needed by being a student at Antioch. This is an example of research in-justice. I could afford the tuition to do so and could use the resources at my disposal. My own workplace institution’s library does not carry sufficient database access for me and reaching out to individual authors or ordering articles through interlibrary loan would not have been timely enough during my legal battle. Traveling to the nearest university (45 minutes away) would not have been possible given physical and temporal constraints I was under. Most in my same situation without being a student would not have been able to access the information necessary as it all exists behind paywall, and most do not know of the intricacies of the academic world.

My experience of navigating the legal and academic worlds was privileged in that I had access. In addition, I had the educational background to effectively navigate the academic institutions I needed to make an effective legal argument given that I could not afford a lawyer who specializes in toxicological cases. Others have found that navigating these institutions is much more challenging or completely impenetrable for marginalized communities (Christiansen, 2011; Outka, 2005; Waterhouse, 2009). Research justice can open up at least one part, the academic, to provide increased resources to those most affected by slow environmental violence (Lu et al., 2022; Nolan et al., 2021; Perez-Ramos et al., 2021; Rickenbacker et al., 2019).

Some of the most powerful slow violence stories have come out of ethnographies, and these are important. A recommendation for scholars is to co-write their studies with those impacted by slow environmental violence through participatory action research and similar qualitative methods (Kramarz, 2022). Focusing on small-scale, slow toxicological violence may help give researchers a sense of the scale of the problem geographically and temporally.

Scholars can use their positions of power and privilege to elevate others' voices such that they are represented in the Academy without the filter of another's lens. This includes inviting marginalized voices to "create and mobilize their own knowledge" as 'legitimate' and 'valid' as more mainstream types of knowledge" (Eda, 2015, p. 106). Victims of slow environmental violence should be able to retain authorship of their own story if they so choose, "story-tellers have to own their story and how it is told and used" (Harman, 2020, p. 777). In addition, those affected should be able to assist with analysis of causative factors and participate in the conclusions and recommended next steps if they so wish.

## Conclusion

By identifying the potential for slow environmental violence and rectifying structural and environmental inequality through social and environmental justice, many instances of slow environmental violence might well be avoided. Holistic social, political, and economic structures must be in place, and carried out in good faith, in those instances where an event does occur so that it prevents the development of slow environmental violence. Affected communities can be supported and heard, actors can be held responsible, human and ecosystem wellness can be valued as much as economic health, and political actors can serve all of their constituents. To build or reinforce these structures requires working with those most impacted when structures are lacking or break down.

Those best positioned to determine environmental inequality are those already living in historically and currently marginalized communities. Slow environmental violence takes place over periods of time and dimensions of space that may not be visible to traditional methods of research or representation. This ‘non-visibility’ precludes much of the justice that is strived for as the stories of those most affected go unreported, ignored, or unheard. Slow toxicological violence, in particular, is difficult to determine due to its traditional reliance on temporally-punctuated and spatially-bound empirical measures and interpretations.

Several methodologies are useful to recognize and tell these stories within the literature. While the study of slow toxicological violence is relatively new, ethnography has been used by multiple researchers to give voice to those impacted in communities that are “sacrifice areas” (Davies, 2018, 2019; Lerner, 2010; Vorbrugg, 2019). This study used phenomenological autoethnography to specifically elucidate my own experience of slow toxicological violence from a tire fire in 2014. It contributes to the literature by providing a first-person account of the injuries and insults to an individual, a family, and a community over time by those in power.

The findings of this study support the facets of slow environmental violence as described by Nixon (2011a, 2011b) and later defined by Rice (2016). In addition, the dominant narrative at the time of the fire was how it would affect the multi-million-dollar companies who lost inventory and a building that day. By giving voice to the lived experience of a neighboring resident, it is clear that it is not just a one-day unfortunate fire in a small city in the Northeast. Instead, it is a story of systemic failures before, during, and after the event that led to life-altering experiences for at least one family, like so many that have experienced slow environmental violence before and will in the future.

### **Epilogue**

As I complete this dissertation, my health challenges continue. I mention this here for two reasons. One, exposure to extreme stress and toxins can be a cause of my diagnoses. Two, Rice (2016) speaks of “tipping points” in regard to slow violence,

...a disruption and, therefore, change of direction in terms of interpretive understanding.

Things previously unseen or unappreciated become progressively apparent, and existing frames of reference are less stable and taken for granted. A tipping point amid a succession of empirical cues suggesting an ongoing and accumulating problem, in turn,

comprises a shift such that a full retreat to the prior point of view is problematic, if not impossible altogether. With slow-onset violence, however, a tipping point may take years to arise or may only arise after the injurious activity has long ceased. (p. 177-178)

Through extensive research, I know the type and potency of the toxins we were exposed to on April 3, 2014, and beyond. The chemicals given off in a tire fire, especially ones that burn incompletely, are both toxic and mutagenic. In addition, we do not know all of what was contained and burned in the warehouse that day. Both Dan and I had acute health impacts, mine being much more severe. Psychologically, I felt the intense impacts almost immediately and continue to this day. However, with the diagnoses I have been given since the fire, I now wonder if my physical body has reached its own tipping point? As with many who experience slow toxicological violence, my own story from the 'injurious activities' continues...

## REFERENCES

- Abercrombie, B. (2002). *Writing out the storm: Reading and writing your way through serious illness or injury* (1st edition). St. Martin's Griffin.
- Aburn, G., Gott, M., & Hoare, K. (2016). What is resilience? An integrative review of the empirical literature. *Journal of Advanced Nursing*, *72*(5), 980–1000. <https://doi.org/10.1111/jan.12888>
- Ackerman, J. M. (2020). *An autoethnography of a deaf woman's lived experiences with breast cancer* [Doctoral Dissertation, Lamar University - Beaumont]. <http://www.proquest.com/docview/2448404875/abstract/F6DF2320AE8845A8PQ/1>
- Adam, B. (2000). The temporal gaze: The challenge for social theory in the context of GM food. *The British Journal of Sociology*, *51*(1), 125–142. <https://doi.org/10.1111/j.1468-4446.2000.00125.x>
- Adam, B. 1945-. (1998). *Timescapes of modernity: The environment and invisible hazards*. Routledge; WorldCat.org. <https://doi.org/10.4324/9780203981382>
- Adams, R., Rivard, H., & Eisenman, D. (2017). Who participates in building disaster resilient communities: A cluster-analytic approach. *Journal of Public Health Management and Practice*, *23*(1), 37–46. <https://doi.org/10.1097/PHH.0000000000000387>
- Adams, T. E. (2008). A review of narrative ethics. *Qualitative Inquiry*, *14*(2), 175–194. <https://doi.org/10.1177/1077800407304417>
- Adams, T. E. (2016). *Narrating the closet: An autoethnography of same-sex attraction* (1st edition). Routledge. <https://doi.org/10.4324/9781315423739>
- Adams, T., & Manning, J. (2015). Autoethnography and family research. *Journal of Family Theory & Review*, *7*, 350–366. <https://doi.org/10.1111/jftr.12116>
- Agency for Toxic Substances and Disease Registry. (2022, July). *Homepage*. <https://www.atsdr.cdc.gov/index.html>
- Aguirre, R. T. P., & Duncan, C. (2013). Being an elbow: A phenomenological autoethnography of faculty-student collaboration for accommodations. *Journal of Teaching in Social Work*, *33*(4–5), 531–551. <https://doi.org/10.1080/08841233.2013.827611>
- Ahmad, S. (2020). Unmaking democracy: How corporate influence is eroding democratic governance. *Harvard International Review*, *41*(2), 54–57.
- Ahmed, F., & Fakhruddin, A. N. M. (2018). A review on environmental contamination of petroleum hydrocarbons and its biodegradation. *International Journal of Environmental Sciences and Natural Resources*, *11*(3), 1–7. <https://doi.org/10.19080/IJESNR.2018.11.555811>

- Aldrich, D. P. (2017). The importance of social capital in building community resilience. In W. Yan & Galloway (Eds.), *Rethinking Resilience, Adaptation and Transformation in a Time of Change* (pp. 357–364). Springer. [https://doi.org/10.1007/978-3-319-50171-0\\_23](https://doi.org/10.1007/978-3-319-50171-0_23)
- Aldrich, D. P., & Meyer, M. A. (2014). Social capital and community resilience. *American Behavioral Scientist*, 59(2), 254–269. <https://doi.org/10.1177/0002764214550299>
- Allen, L. N., & Feigl, A. B. (2017). What's in a name? A call to reframe non-communicable diseases. *The Lancet Global Health*, 5(2), e129–e130. [https://doi.org/10.1016/S2214-109X\(17\)30001-3](https://doi.org/10.1016/S2214-109X(17)30001-3)
- Allen-Collinson, J. (2013). Autoethnography as engagement. In S. Holman Jones, T. E. Adams, & C. Ellis (Eds.), *The Handbook of Autoethnography* (1st ed., pp. 281–299). Routledge.
- Allen-Collinson, J., & Hockey, J. (2004). Autoethnography: Self-indulgence or rigorous methodology? In *Philosophy and the Sciences of Exercise, Health and Sport: Critical Perspectives on Research Methods* (pp. 177–191). Routledge.
- Anderson, L. (2006). Analytic autoethnography. *Journal of Contemporary Ethnography*, 35(4), 373–395. <https://doi.org/10.1177/0891241605280449>
- Armiero, M. (2021). The case for the wasteocene. *Environmental History*, 26(3), 425–430. <https://doi.org/10.1093/envhis/emab014.003>
- Bae, M.-J., & Park, Y.-S. (2014). Biological early warning system based on the responses of aquatic organisms to disturbances: A review. *Science of The Total Environment*, 466–467, 635–649. <https://doi.org/10.1016/j.scitotenv.2013.07.075>
- Balint, P. J., Stewart, R. E., Desai, A., & Walters, L. C. (2011). *Wicked environmental problems* (1st ed.). Island Press. [https://doi.org/10.5822/978-1-61091-047-7\\_1](https://doi.org/10.5822/978-1-61091-047-7_1)
- Ballard, R. L., & Ballard, S. J. (2011). From narrative inheritance to narrative momentum: Past, present, and future stories in an international adoptive family. *Journal of Family Communication*, 11(2), 69–84. <https://doi.org/10.1080/15267431.2011.554618>
- Barnwell, A. (2019). Family secrets and the slow violence of social stigma. *Sociology*, 53(6), 1111–1126. <https://doi.org/10.1177/0038038519846443>
- Bartlett, C., Marshall, M., & Marshall, A. (2007). *Integrative science: Enabling concepts within a journey guided by trees holding hands and Two-Eyed Seeing, Two-Eyed Seeing knowledge sharing series, Manuscript No. 1* [Unpublished manuscript]. <http://www.integrativescience.ca/uploads/articles/2007-Bartlett-Marshall-Integrative-Science-Two-Eyed-Seeing-Aboriginal-co-learning-trees-holding-hands.pdf>  
[https://doi.org/10.1007/978-981-287-532-7\\_638-1](https://doi.org/10.1007/978-981-287-532-7_638-1)
- Baxter, P., & Jack, S. (2015). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*. <https://doi.org/10.46743/2160-3715/2008.1573>

- Beamish, T. D. (1999). Silent spill. The anatomy of a chronic pollution event [Doctoral Dissertation, University of California]. In *ProQuest Dissertations and Theses* (304497682). ProQuest Dissertations & Theses Global. <https://www.proquest.com/docview/304497682>
- Beamish, T. D. (2002a). *Silent spill: The organization of an industrial crisis*. The MIT Press. <https://doi.org/10.7551/mitpress/6227.001.0001>
- Beamish, T. D. (2002b). Waiting for crisis: Regulatory inaction and ineptitude and the Guadalupe Dunes oil spill. *Social Problems*, 49(2), 150–177. <https://doi.org/10.1525/sp.2002.49.2.150>
- Becker, J. S., Paton, D., Johnston, D. M., Ronan, K. R., & McClure, J. (2017). The role of prior experience in informing and motivating earthquake preparedness. *International Journal of Disaster Risk Reduction*, 22, 179–193. <https://doi.org/10.1016/j.ijdr.2017.03.006>
- Bergum, V., & Dossetor, J. (2005). *Relational ethics: The full meaning of respect*. University Publishing Group.
- Bertomeu-Sánchez, J. R. (2020). Poisons in the Twentieth Century: Unpunished crimes, slow violence and the role of history. *Cahiers François Viète*, III–9, Article III–9. <https://doi.org/10.4000/cahierscfv.517>
- Bhatia, T. (2022). Toxicity 2: The violence of thresholds in Philadelphia. *International Journal of Urban and Regional Research*, 46(4), 698–710. <https://doi.org/10.1111/1468-2427.13094>
- Bloomberg Markets. (2022). *O&G Industries, Inc: Company profile and news*. <https://www.bloomberg.com/profile/company/0206129D:US>
- Boaggio, K., LeDuc, S. D., Rice, R. B., Duffney, P. F., Foley, K. M., Holder, A. L., McDow, S., & Weaver, C. P. (2022). Beyond particulate matter mass: Heightened levels of lead and other pollutants associated with destructive fire events in California. *Environmental Science & Technology*, 56(20), 14272–14283. <https://doi.org/10.1021/acs.est.2c02099>
- Bochner, A., & Ellis, C. (2016). *Evocative autoethnography: Writing lives and telling stories* (1st edition). Routledge. <https://doi.org/10.4324/9781315545417>
- Bochner, A. P., & Ellis, C. (2012). Into the garden of Illini: The International Congress as a house of being for qualitative inquiry. *International Review of Qualitative Research*, 5(1), 73–82. <https://doi.org/10.1525/irqr.2012.5.1.73>
- Bokhove, C., & Downey, C. (2018). Automated generation of ‘good enough’ transcripts as a first step to transcription of audio-recorded data. *Methodological Innovations*, 11(2), 2059799118790743. <https://doi.org/10.1177/2059799118790743>
- Bretschneider, P. J., Cirilli, S., Jones, T., Lynch, S., & Wilson, N. A. (2017). *Document review as a qualitative research data collection method for teacher research*. SAGE Publications Ltd. <https://doi.org/10.4135/9781473957435>



- Briggs, D. (2003). Environmental pollution and the global burden of disease. *British Medical Bulletin*, 68(1), 1–24. <https://doi.org/10.1093/bmb/ldg019>
- Brooks, A. K., Martin, M. C., & Holcomb, M. R. (2018). Rebuilding identity after a natural or human generated disaster. *2018 Conference Proceedings*, 5. <https://newprairiepress.org/aerc/2018/roundtables/8/>
- Brooks, A., Martin, M., & Holcomb, M. (2018). *Rebuilding Identity After a Natural or Human Generated Disaster*. 6. <https://newprairiepress.org/aerc/2018/roundtables/8>
- Bullard, R. D. (Ed.). (1996). *Unequal protection: Environmental justice and communities of color*. Sierra Club Books.
- Bunde-Birouste, A., Byrne, F., & Kemp, L. (2019). Autoethnography. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 509–526). Springer Singapore. [https://doi.org/10.1007/978-981-10-5251-4\\_86](https://doi.org/10.1007/978-981-10-5251-4_86)
- Butz, D., & Besio, K. (2009). Autoethnography. *Geography Compass*, 3(5), 1660–1674. <https://doi.org/10.1111/j.1749-8198.2009.00279.x>
- Caelli, K., Ray, L., & Mill, J. (2003). ‘Clear as mud’: Toward greater clarity in generic qualitative research. *International Journal of Qualitative Methods*, 2(2), 1–13. <https://doi.org/10.1177/160940690300200201>
- Cahill, C., & Pain, R. (2019). Representing slow violence and resistance: On hiding and seeing. *ACME: An International E-Journal for Critical Geographies*, 18(5), 1054–1065.
- Cairns, K. (2022). Caring about water in Camden, New Jersey: Social reproduction against slow violence. *Gender, Place & Culture*, 29(10), 1423–1445. <https://doi.org/10.1080/0966369X.2021.1997940>
- Carey, M. (2018). *The transformative process of Indigenous autoethnography: (Re)connecting With Kaupapa Māori* [Doctoral Dissertation, University of Auckland]. <https://doi.org/10.4135/9781526439994>
- Carlin, P. S., & Park-Fuller, L. M. (2012). Disaster narrative emergent/cies: Performing loss, identity and resistance. *Text and Performance Quarterly*, 32(1), 20–37. <https://doi.org/10.1080/10462937.2011.622782>
- Carrington, D. (2020, December 16). Air pollution verdict shines political light on UK’s invisible killer. *The Guardian*. <http://www.theguardian.com/environment/2020/dec/16/air-pollution-verdict-shines-political-light-uk-invisible-killer-ella-kissi-debrah>
- Chang, H. (2009). *Autoethnography as method*. Routledge.
- Chang, H. (2013). Individual and collaborative autoethnography as method. In S. Holman Jones, T. E. Adams, & C. Ellis (Eds.), *Handbook of Autoethnography* (pp. 107–122). Taylor and Francis.

- Chang, H. (2016). Autoethnography in health research: Growing pains? *Qualitative Health Research*, 26(4), 443–451. <https://doi.org/10.1177/1049732315627432>
- Chonka, P. (2016). Spies, stonework, and the suuq: Somali nationalism and the narrative politics of pro-Harakat Al Shabaab Al Mujaahidiin online propaganda. *Journal of Eastern African Studies*, 10(2), 247–265. <https://doi.org/10.1080/17531055.2016.1180825>
- Choudhury, M.-U.-I., & Emdad Haque, C. (2018). Interpretations of resilience and change and the catalytic roles of media: A case of Canadian daily newspaper discourse on natural disasters. *Environmental Management*, 61(2), 236–248. <https://doi.org/10.1007/s00267-017-0980-7>
- Christian, J. M., & Dowler, L. (2019). Slow and fast violence. *ACME: An International Journal for Critical Geographies*, 18(5), 1066–1075.
- Christiansen, N. C. (2011). Environmental justice: Deciphering the maze of a private right of action. *Mississippi Law Journal*, 81(4), 843–894.
- Churchman, C. W. (1967). Guest editorial: Wicked problems. *Management Science*, 14(4), B141–B142.
- Clague, T. (2017, November 8). Make sure your book is discoverable! Advice for the reader-oriented author. *Academic Publishing*. <https://blogs.lse.ac.uk/impactofsocialsciences/2017/11/08/make-sure-your-book-is-discoverable-advice-for-the-reader-oriented-author/>
- Coccan, P., Filip, S., & David, N. (2020). Repulsive cultural landscapes as areas of risk and vulnerability. *Romanian Journal of Geography / Revue Roumaine de Géographie*, 64(2), 147–154.
- Collins, K. (2015). *Alice through the telescope: A critical autoethnography of an (almost) participatory research process* [Doctoral Dissertation, University of the West of England, Bristol (United Kingdom)]. <http://www.proquest.com/docview/2440392901/339FD1FCF7CD47E5PQ/3>
- Connecticut Data Collaborative. (2012). *Torrington Fact Sheet* (p. 2) [CERC Town Profile 2012]. [https://www.torringtonct.org/sites/g/files/vyhli5091/f/uploads/torrington\\_fact\\_sheet.pdf](https://www.torringtonct.org/sites/g/files/vyhli5091/f/uploads/torrington_fact_sheet.pdf)
- Connecticut Department of Energy and Environmental Protection. (2022a). *Environmental quality*. <https://portal.ct.gov/DEEP/About/Main/Environmental-Quality>
- Connecticut Department of Energy and Environmental Protection. (2022b, January). *About us*. <https://portal.ct.gov/DEEP/About/About-Us>
- Cordova, S. M. B. (2018). *Socially constructed narratives for exploring the impacts of air pollutant infiltration in built environments* [Doctoral Dissertation, The University of Arizona]. <https://www.proquest.com/docview/2128028111>

- Creswell, J.W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. (2nd ed.) Thousand Oaks: Sage.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Custer, D. (2014). Autoethnography as a transformative research method. *The Qualitative Report*, 19(37), 15. <https://doi.org/10.46743/2160-3715/2014.1011>
- Danzak, R., Gunther, C., & Cole, M. (2021). Someone else's child: A co-constructed, performance autoethnography of adoption from three perspectives. *The Qualitative Report*, 26(3), 637–651. <https://doi.org/10.46743/2160-3715/2021.4692>
- Davies, T. (2018). Toxic space and time: Slow violence, necropolitics, and petrochemical pollution. *Annals of the American Association of Geographers*, 108(6), 1537–1553. <https://doi.org/10.1080/24694452.2018.1470924>
- Davies, T. (2019). Slow violence and toxic geographies: 'Out of sight' to whom? *Environment and Planning C: Politics and Space*, 40(2), 409–427. <https://doi.org/10.1177/2399654419841063>
- Davies, T. (2021). Geography, time, and toxic pollution: Slow observation in Louisiana. In S. O'Leary (Ed.), *A Research Agenda for Geographies of Slow Violence* (pp. 21–39). Elgar Online. <https://doi.org/10.4337/9781788978033>
- Davoudi, S., Shaw, K., Haider, L. J., Quinlan, A. E., Peterson, G. D., Wilkinson, C., Fünfgeld, H., McEvoy, D., & Porter, L. (2012). Resilience: A Bridging Concept or a Dead End? "Reframing" Resilience: Challenges for Planning Theory and Practice Interacting Traps: Resilience Assessment of a Pasture Management System in Northern Afghanistan Urban Resilience: What Does it Mean in Planning Practice? Resilience as a Useful Concept for Climate Change Adaptation? The Politics of Resilience for Planning: A Cautionary Note. *Planning Theory & Practice*, 13(2), 299–333. <https://doi.org/10.1080/14649357.2012.677124>
- de Onís, C. M. de, & Pezzullo, P. C. (2017). The ethics of embodied engagement: Ethnographies of environmental justice. In R. Holifield, J. Chakroborty, & G. Walker (Eds.), *The Routledge Handbook of Environmental Justice* (1st ed., p. 10). Routledge. <https://doi.org/10.4324/9781315678986-19>
- Delamont, S. (2009). The only honest thing: Autoethnography, reflexivity and small crises in fieldwork. *Ethnography and Education*, 4(1), 51–63. <https://doi.org/10.1080/17457820802703507>
- Denzin, N. K. (1989). *Interpretive interactionism* (Second edition). Sage Publications, Inc. <http://www.gbv.de/dms/bowker/toc/9780803930032.pdf>
- Denzin, N. K. (2013). *Interpretive autoethnography* (Second edition). SAGE Publications, Inc. <https://doi.org/10.4135/9781506374697>

- Douglas, K., & Carless, D. (2013). A history of autoethnographic inquiry. In S. Holman Jones, T. E. Adams, & C. Ellis (Eds.), *A Handbook of Autoethnography* (pp. 84–106). Routledge.
- Downard, J. M. (2014). *Particulate emissions of tire combustion* [Master of Science, University of Iowa]. <https://doi.org/10.17077/etd.gc2ltaej>
- du Bois, W. E. B. (2014). *The souls of Black folk*. CreateSpace Independent Publishing Platform. <https://doi.org/10.4324/9781315631998>
- Dumbleton, S. (2013). Goodies and Baddies: Equivocal thoughts about families using an autoethnographic approach to explore some tensions between service providers and families of people with learning disabilities. *Ethics and Social Welfare*, 7(3), 282–292. <https://doi.org/10.1080/17496535.2013.815789>
- Eda, H. (2015). Disaster justice: Mobilizing grassroots knowledge against disaster nationalism in Japan. In A. Jolivet (Ed.), *Research Justice: Methodologies for Social Change* (pp. 95–108). Policy Press. <https://doi.org/10.51952/9781447324645.ch009>
- Edelstein, M. R. (1981). *The social and psychological impacts of groundwater contamination in the Legler section of Jackson, New Jersey*. Prepared for the Law Firm Kriendler & Kriendler for Ayers v Jackson Township.
- Edelstein, M. R. (1984). Social impacts and social change: Some initial thoughts on the emergence of a toxic victims movement. *Impact Assessment Bulletin*, 3(3), 7–17. <https://doi.org/10.1080/07349165.1984.9725536>
- Edelstein, M. R. (1999). *Psychosocial impacts association with the contamination of the middle fork of Little Beaver Creek*. Prepared for the Law Firm Murray & Murray for Bettis v Reutgers-Nease.
- Edelstein, M. R. (2004). *Contaminated communities: Coping with residential toxic exposure* (2nd ed., Vol. 1–1 online resource (376 p.)). Westview Press; WorldCat.org.
- Edwards, G. A. S., Reid, L., & Hunter, C. (2016). Environmental justice, capabilities, and the theorization of well-being. *Progress in Human Geography*, 40(6), 754–769. <https://doi.org/10.1177/0309132515620850>
- Ellis, C. (1999). Heartful autoethnography. *Qualitative Health Research*, 9(5), 669–683. <https://doi.org/10.1177/104973299129122153>
- Ellis, C. (2001). With mother/with child: A true story. *Qualitative Inquiry*, 7(5), 598–616. <https://doi.org/10.1177/107780040100700505>
- Ellis, C. (2007). Telling secrets, revealing lives: Relational ethics in research with intimate others. *Qualitative Inquiry*, 13(1), 3–29. <https://doi.org/10.1177/1077800406294947>
- Ellis, C. (2009). Telling tales on neighbors: Ethics in two voices. *International Review of Qualitative Research*, 2(1), 3–27. <https://doi.org/10.1525/irqr.2009.2.1.3>

- Ellis, C., Adams, T. E., & Bochner, A. P. (2011). Autoethnography: An overview. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 12(1). <https://doi.org/10.17169/fqs-12.1.1589>
- Ellis, C., & Bochner, A. (2000). Autoethnography, personal narrative, reflexivity: Researcher as subject. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research (2nd Ed.)* (pp. 733–768). SAGE Publications. [https://scholarcommons.usf.edu/spe\\_facpub/91](https://scholarcommons.usf.edu/spe_facpub/91)
- Ellis, C., & Bochner, A. (2006). Communication as autoethnography. In *Communication as ...: Perspectives on Theory*. SAGE Publications. <http://dx.doi.org/10.4135/9781483329055>
- Ellis, C., Bochner, A. P., Rambo, C., Berry, K., Shakespeare, H., Gingrich-Philbrook, C., Adams, T. E., Rinehart, R. E., & Bolen, D. M. (2018). Coming unhinged: A twice-told multivoiced autoethnography. *Qualitative Inquiry*, 24(2), 119–133. <https://doi.org/10.1177/1077800416684874>
- Engstrom, S., & Powers, M. C. F. (2021). Embracing an ecosocial worldview for climate justice and collective healing. *Journal of Transdisciplinary Peace Praxis*, 3(1), 120–144.
- Environmental Protection Agency. (2022a). *Summary of the toxic substances control act*. <https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act>
- Environmental Protection Agency. (2022b). *Superfund: CERCLA overview* [Overviews and Factsheets]. <https://www.epa.gov/superfund/superfund-cercla-overview>
- Eriksen, S., Schipper, E. L. F., Scoville-Simonds, M., Vincent, K., Adam, H. N., Brooks, N., Harding, B., Khatri, D., Lenaerts, L., Liverman, D., Mills-Novoa, M., Mosberg, M., Movik, S., Muok, B., Nightingale, A., Ojha, H., Sygna, L., Taylor, M., Vogel, C., & West, J. J. (2021). Adaptation interventions and their effect on vulnerability in developing countries: Help, hindrance or irrelevance? *World Development*, 141, 105383. <https://doi.org/10.1016/j.worlddev.2020.105383>
- Etherington, K. (2004). *Becoming a reflexive researcher—Using our selves in research* (1st edition). Jessica Kingsley Publishers.
- Etherington, K. (2007). Ethical research in reflexive relationships. *Qualitative Inquiry*, 13(5), 599–616. <https://doi.org/10.1177/1077800407301175>
- Faber, D., Levy, B., & Schlegel, C. (2021). Not all people are polluted equally in capitalist society: An eco-socialist commentary on liberal environmental justice theory. *Capitalism Nature Socialism*, 32(4), 1–16. <https://doi.org/10.1080/10455752.2021.2009640>
- Families Displaced*. (2014, April 5). [Broadcast TV]. WFSB.
- Farmer, P. (2004). An anthropology of structural violence. *Current Anthropology*, 45(3), 305–325. <https://doi.org/10.1086/382250>
- FB Environmental Associates. (2012). *A statewide total maximum daily load analysis for bacteria impaired waters*. Connecticut Department of Energy and Environmental

- Protection. [https://attains.epa.gov/attains-public/api/documents/actions/CT\\_DEP01/42708/108099](https://attains.epa.gov/attains-public/api/documents/actions/CT_DEP01/42708/108099)
- Fire causes environmental concerns.* (2014, April 4). [Broadcast TV]. WFSB.
- Fire damage.* (2014, August 22). [Broadcast TV]. WTNH.
- Fire still flaring up at tire warehouse.* (2014, April 3). WFSB.
- Fisher, R. (2021, January 31). *The unseen “slow violence” that affects millions.* BBC Future. <https://www.bbc.com/future/article/20210127-the-invisible-impact-of-slow-violence>
- Flood, R. L., & Jackson, M. C. (1991). Total systems intervention: A practical face to critical systems thinking. *Systems Practice*, 4(3), 197–213. <https://doi.org/10.1007/BF01059565>
- Forber-Pratt, A. J. (2015). “You’re going to do what?” Challenges of autoethnography in the academy. *Qualitative Inquiry*, 21(9), 821–835. <https://doi.org/10.1177/1077800415574908>
- Fushimi, K. (2021). *Qualitative research is not a unified paradigm: Implications for the evaluation of qualitative research studies.*
- Galtung, J. (1969). Violence, peace, and peace research. *Journal of Peace Research*, 6(3), 167–191. <https://doi.org/10.1177/002234336900600301>
- Gibbs, A. (2018). Ethical issues when undertaking autoethnographic research with families. In R. Iphofen & M. Tolich (Eds.), *The SAGE Handbook of Qualitative Research Ethics* (pp. 148–160). SAGE Publications Ltd. <https://doi.org/10.4135/9781526435446>
- Gibbs, M. (1982). *Psychological dysfunction in the Legler Litigation Group* [Unpublished manuscript prepared for Kreindler and Kreindler].
- Giles, D. P. (2010). *“Unchartered” territory: An autoethnographic perspective on establishing Georgia’s first public two-way immersion school* [Doctoral Dissertation]. The University of Georgia.
- Goddard, A., & Carey, N. (2017). *Discourse: The basics* (1st edition). Routledge.
- Graham, J. A. (2015). *An autoethnographic account of married life after traumatic brain injury: A couple’s co-construction of their journey* [Dissertation, University of South Africa]. <https://uir.unisa.ac.za/handle/10500/19652>
- Grant, A. (2018). *Doing excellent social research with documents: Practical examples and guidance for qualitative researchers.* Routledge. <https://doi.org/10.4324/9781315177274>
- Green Ecology. (2015). *Material safety data sheet: Tyre pryolysis oil.* <https://satesllc.com/wp-content/uploads/2016/10/MSDS-Green-Ecology-Tyre-Pyrolysis-Oil-20150514.pdf>
- Greenfield, N. (2022, October 6). *Mutual aid and disaster justice: “We keep us safe.”* NRDC. <https://www.nrdc.org/stories/mutual-aid-and-disaster-justice-we-keep-us-safe>

- Gruppetta, M. (2004). *Autophenomenography? Alternative uses of autographically based research*. Australian Association for Research in Education Annual Conference, Melbourne, Australia.  
[https://www.academia.edu/1986604/Autophenomenography\\_Alternative\\_uses\\_of\\_autographically\\_based\\_research](https://www.academia.edu/1986604/Autophenomenography_Alternative_uses_of_autographically_based_research)
- Guillemin, M., & Gillam, L. (2004). Ethics, reflexivity, and “ethically important moments” in research. *Qualitative Inquiry*, *10*(2), 261–280.  
<https://doi.org/10.1177/1077800403262360>
- Hafferty, C. (2020, August 27). Using automated transcription software for qualitative research: A tutorial (part 2). *Caitlin Hafferty: PhD Researcher Exploring the Best Practice Use of ICTs for Stakeholder Engagement*.  
<https://caitlinhafferty.blogspot.com/2020/08/introduction-to-automated-transcription-software-part2.html>
- Hammersley, M. (2012). Troubling theory in case study research. *Higher Education Research & Development*, *31*(3), 393–405. <https://doi.org/10.1080/07294360.2011.631517>
- Harman, S. (2020). The danger of stories in global health. *The Lancet*, *395*(10226), 776–777.  
[https://doi.org/10.1016/S0140-6736\(20\)30427-X](https://doi.org/10.1016/S0140-6736(20)30427-X)
- Harr, J. (1996). *A civil action* (Reprint edition). Vintage.
- Health concerns grow after factory fire*. (2014, April 14). [Broadcast TV]. WFSB.
- Hemachandra, K., Amaratunga, D., & Haigh, R. (2018). Role of women in disaster risk governance. *Procedia Engineering*, *212*, 1187–1194.  
<https://doi.org/10.1016/j.proeng.2018.01.153>
- Herrick, C. (2020). The optics of noncommunicable diseases: From lifestyle to environmental toxicity. *Sociology of Health & Illness*, *42*(5), 1041–1059. <https://doi.org/10.1111/1467-9566.13078>
- Higueras, E. P. (2017). The global risk report 2017. *Tierra y tecnología: revista de información geológica*, *49*, 6.
- Holman Jones, S. (2005). Autoethnography: Making the personal political. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (3rd ed., pp. 763–791). SAGE Publications.
- Holmberg Deposition for Holmberg v O&G Industries, Inc., Toce Brothers, Inc. And Liberty Mutual Group, Inc., DBD-CV-15-6016793-S (State of Connecticut, Superior Court, Judicial District of Litchfield at Litchfield 2017).
- Holmberg Interview*. (2014, August 22). [Broadcast TV]. NBC CT.

- Holmberg v O&G Industries, Inc., Toce Brothers, Inc. And Liberty Mutual Group, Inc., DBD-CV-15-6016793-S (State of Connecticut, Superior Court, Judicial District of Litchfield at Litchfield 2017).
- Homeowners assess damage after tire fire.* (2014, April 5). [Broadcast TV]. WFSB.
- Iengo, I. (2022). Endometriosis and environmental violence: An embodied, situated ecopolitics from the land of fires in Campania, Italy. *Environmental Humanities*, 14(2), 341–360. <https://doi.org/10.1215/22011919-9712412>
- IPCC. (2021). *IPCC 2021: Summary for policymakers* (Climate Change 2021: The Physical Science Basis. Working Group I Contribution to the IPCC Sixth Assessment Report, p. 32). Intergovernmental Panel on Climate Change. <https://www.ipcc.ch/report/ar6/wg1/>
- Jackson, K. M., Pukys, S., Castro, A., Hermosura, L., Mendez, J., Vohra-Gupta, S., Padilla, Y., & Morales, G. (2018). Using the transformative paradigm to conduct a mixed methods needs assessment of a marginalized community: Methodological lessons and implications. *Evaluation and Program Planning*, 66, 111–119. <https://doi.org/10.1016/j.evalprogplan.2017.09.010>
- Jensen-Hart, S., & Williams, D. J. (2010). Blending voices: Autoethnography as a vehicle for critical reflection in social work. *Journal of Teaching in Social Work*, 30(4), 450–467. <https://doi.org/10.1080/08841233.2010.515911>
- Johnson, P. (2015). Evaluating qualitative research: Past, present and future. *Qualitative Research in Organizations and Management: An International Journal*, 10(4), 320–324. <https://doi.org/10.1108/QROM-07-2015-1303>
- Jones, N. (2019). Dying to eat? Black food geographies of slow violence and resilience. *ACME: An International E-Journal for Critical Geographies*, 18(5), 1076–1099.
- Jupp, V., & Norris, C. (1993). Traditions in documentary analysis. In *Social research: Philosophy, politics and practice* (pp. 37–51). Sage.
- Kankanamge, N., Yigitcanlar, T., Goonetilleke, A., & Kamruzzaman, M. (2019). Can volunteer crowdsourcing reduce disaster risk? A systematic review of the literature. *International Journal of Disaster Risk Reduction*, 35, 101097. <https://doi.org/10.1016/j.ijdrr.2019.101097>
- Keleş, U. (2022). Writing a “good” autoethnography in educational research: A modest proposal. *The Qualitative Report*, 27(9), 2026–2046. <https://doi.org/10.46743/2160-3715/2022.5662>
- Kern, L. (2016). Rhythms of gentrification: Eventfulness and slow violence in a happening neighbourhood. *Cultural Geographies*, 23(3), 441–457. <https://doi.org/10.1177/1474474015591489>



- Kitagawa, K. (2018). Questioning ‘integrated’ disaster risk reduction and ‘all of society’ engagement: Can ‘preparedness pedagogy’ help? *A Journal of Comparative and International Education*, 0(0), 1–17. <https://doi.org/10.1080/03057925.2018.1464385>
- Kitagawa, K. (2019). Exploring ‘everyday-life preparedness’: Three case studies from Japan. *International Journal of Disaster Risk Reduction*, 34, 265–274. <https://doi.org/10.1016/j.ijdr.2018.11.025>
- Kivunja, C., & Kuyini, A. B. (2017). Understanding and Applying Research Paradigms in Educational Contexts. *International Journal of Higher Education*, 6(5), 26. <https://doi.org/10.5430/ijhe.v6n5p26>
- Klinker, J., & Todd, R. (2015). Two autoethnographies: A search for understanding of gender and age. *The Qualitative Report*. <https://doi.org/10.46743/2160-3715/2007.1632>
- Kramarz, T., Park, S., & Johnson, C. (2021). Governing the dark side of renewable energy: A typology of global displacements. *Energy Research & Social Science*, 74, 1-11. <https://doi.org/10.1016/j.erss.2020.101902>
- Kramarz, T. (2022). Extractive industry disasters and community responses: A typology of vulnerable subjects. *Environmental Politics*, 31(1), 89–109. <https://doi.org/10.1080/09644016.2021.1978198>
- Kravia, K., & Pagliano, P. (2015). Using a Transformative paradigm research approach to investigate guidance and counselling service in Papua New Guinea schools. *ETropic: Electronic Journal of Studies in the Tropics*, 14(1), Article 1. <https://doi.org/10.25120/etropic.14.1.2015.3372>
- Krings, A., Kornberg, D., & Lane, E. (2019). Organizing Under austerity: How residents’ concerns became the Flint water crisis. *Critical Sociology*, 45(4–5), 583–597. <https://doi.org/10.1177/0896920518757053>
- Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd edition). University of Chicago Press. <https://doi.org/10.7208/chicago/9780226458106.001.0001>
- Lakshmi, M. R., & Kumar, V. D. (2015). Anthropogenic Hazard and Disaster Relief Operations: A Case Study of GAIL Pipeline Blaze in East Godavari of A.P. *Procedia - Social and Behavioral Sciences*, 189, 198–207. <https://doi.org/10.1016/j.sbspro.2015.03.215>
- Lapadat, J. C. (2017). Ethics in autoethnography and collaborative autoethnography. *Qualitative Inquiry*, 23(8), 589–603. <https://doi.org/10.1177/1077800417704462>
- Laville, S. (2020, December 8). Cumulative pollution from London traffic may have led to girl’s death. *The Guardian*. <http://www.theguardian.com/environment/2020/dec/08/cumulative-pollution-from-london-traffic-may-have-led-to-girls-death>
- Lemieux, P., & DeMarini, D. (1992). *Mutagenicity of emissions from the simulated open burning of scrap rubber tires* (EPA-600/R-92-127; p. 57). Environmental Protection Agency.

[https://www.researchgate.net/publication/255165715\\_Mutagenicity\\_of\\_emissions\\_from\\_the\\_simulated\\_open\\_burning\\_of\\_scrap\\_rubber\\_tires\\_Final\\_report](https://www.researchgate.net/publication/255165715_Mutagenicity_of_emissions_from_the_simulated_open_burning_of_scrap_rubber_tires_Final_report)

- Lemieux, P. M., & Ryan, J. V. (1993). Characterization of air pollutants emitted from a simulated scrap tire fire. *Air & Waste*, 43(8), 1106–1115.  
<https://doi.org/10.1080/1073161X.1993.10467189>
- Lerner, S. (2010). *Sacrifice zones: The front lines of toxic chemical exposure in the United States*. <https://doi.org/10.7551/mitpress/8157.001.0001>
- Li, T. M. (2014). *Land's end: Capitalist relations on an Indigenous frontier*. Duke University Press. <https://doi.org/10.1215/9780822376460>
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry* (1st edition). SAGE Publications.
- Lincoln, Y. S. (2013). Ethical practices in qualitative research. In D. Mertens & P. Ginsberg (Eds.), *The Handbook of Social Research Ethics* (p. Chapter 10). SAGE Publications, Inc. <https://doi.org/10.4135/9781483348971>
- Lindsay, S., & Fuentes, K. (2022). It Is Time to Address Ableism in Academia: A Systematic Review of the Experiences and Impact of Ableism among Faculty and Staff. *Disabilities*, 2(2), 178–203. <https://doi.org/10.3390/disabilities2020014>
- Lionnet, F. (1989). The politics and aesthetics of Metissage. In S. Smith & J. Watson (Eds.), *Women, Autobiography, Theory* (pp. 325–336). University of Wisconsin Press.
- Lönngren, J., & van Poeck, K. (2021). Wicked problems: A mapping review of the literature. *International Journal of Sustainable Development & World Ecology*, 28(6), 481–502. <https://doi.org/10.1080/13504509.2020.1859415>
- Lu, T., Liu, Y., Garcia, A., Wang, M., Li, Y., Bravo-villasenor, G., Campos, K., Xu, J., & Han, B. (2022). Leveraging citizen science and low-cost sensors to characterize air pollution exposure of disadvantaged communities in Southern California. *International Journal of Environmental Research and Public Health*, 19(14), Article 14. <https://doi.org/10.3390/ijerph19148777>
- Lukasiewicz, A., & Baldwin, C. (2021). *Natural hazards and disaster justice*. Palgrave MacMillan. <https://link.springer.com/book/10.1007/978-981-15-0466-2>
- Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues in Educational Research*, 16(2), 193–205.
- Maradona, A., Marshall, G., Mehrvar, M., Pushchak, R., Laursen, A. E., McCarthy, L. H., Bostan, V., & Gilbride, K. A. (2012). Utilization of multiple organisms in a proposed early-warning biomonitoring system for real-time detection of contaminants: Preliminary results and modeling. *Journal of Hazardous Materials*, 219–220, 95–102. <https://doi.org/10.1016/j.jhazmat.2012.03.064>

- Markham, A. (2020). *Doing digital ethnography in the digital age*.  
<https://doi.org/10.31235/osf.io/hqm4g>
- Martin, M. R. (2020). *A phenomenological autoethnography: The psycho-somatic-spiritual transformation of childhood complex trauma* [Doctoral Dissertation]. California Institute of Integral Studies.
- Matthews, A. (2017). *Writing through the pain: An autoethnographic exploration of grief, the doctoral process, dissertation difficulties, and doctoral attrition* [Doctoral Dissertation]. University of Toledo.
- Mazzucco, W., Costantino, C., Restivo, V., Alba, D., Marotta, C., Tavormina, E., Cernigliaro, A., Macaluso, M., Cusimano, R., Grammatta, R., Tramuto, F., Scodotto, S., & Vitale, F. (2020). The management of health hazards related to municipal solid waste on fire in Europe: An environmental justice issue? *International Journal of Environmental Research and Public Health*, 17(18), 6617. <https://doi.org/10.3390/ijerph17186617>
- McEwen, L., Holmes, A., Quinn, N., & Cobbing, P. (2018). ‘Learning for resilience’: Developing community capital through flood action groups in urban flood risk settings with lower social capital. *International Journal of Disaster Risk Reduction*, 27, 329–342. <https://doi.org/10.1016/j.ijdrr.2017.10.018>
- McKittrick, K. (2006). *Demonic grounds: Black women and the cartographies of struggle*. University of Minnesota Press.
- McKittrick, K. (2011). On plantations, prisons, and a black sense of place. *Social & Cultural Geography*, 12(8), 947–963. <https://doi.org/10.1080/14649365.2011.624280>
- Medford, K. (2006). Caught with a fake id: Ethical questions about slippage in autoethnography. *Qualitative Inquiry*, 12(5), 853–864. <https://doi.org/10.1177/1077800406288618>
- Méndez, M. G. (2014). Autoethnography as a research method: Advantages, limitations and criticisms. *Colombian Applied Linguistics Journal*, 15(2), 279–287. <https://doi.org/10.14483/udistrital.jour.calj.2013.2.a09>
- Mertens, D. M. (1999). Inclusive evaluation: Implications of transformative theory for evaluation. *American Journal of Evaluation*, 20(1), 1–14. <https://doi.org/10.1177/109821409902000102>
- Mertens, D. (2005). Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods. In *SAGE Publications (CA)* (2nd ed.). SAGE Publications.
- Mertens, D. (2007). Transformative paradigm: Mixed methods and social justice. *Journal of Mixed Methods Research*, 1(3), 212–225. <https://doi.org/10.1177/1558689807302811>
- Mertens, D. (2010). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (3rd ed.). SAGE.

- Mertens, D. (2012). Transformative mixed methods: Addressing inequities. *American Behavioral Scientist*, 56(6), 802–813. <https://doi.org/10.1177/0002764211433797>
- Mertens, D., Fraser, J., & Heimlich, J. (2008). M or F?: Gender, identity, and the transformative research paradigm. *Museums & Social Issues*, 3(1), 81–92. <https://doi.org/10.1179/msi.2008.3.1.81>
- Mertens, D. M., Holmes, H. M., & Harris, R. L. (2009). Transformative research and ethics. In D. Mertens & P. Ginsberg, *The Handbook of Social Research Ethics* (pp. 85–102). SAGE Publications, Inc. <https://doi.org/10.4135/9781483348971.n6>
- Mezirow, J. (2000). Learning to Think Like An Adult: Core Concepts of Transformation Theory. In J. Mezirow & Associates (Eds.), *Learning as Transformation: Critical Perspectives on a Theory in Progress* (pp. 3–33). Jossey-Bass.
- Midgley, J. (1996). Social work and economic development: Introduction. *International Social Work*, 39(1), 5–12. <https://doi.org/10.1177/002087289603900101>
- Mills, A., Durepos, G., & Wiebe, E. (Eds.). (2010). Bounding the case. In *Encyclopedia of Case Study Research*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412957397.n24>
- Mohai, P., & Bryant, B. (1992). Environmental injustice: Weighing race and class as factors in the distribution of environmental hazards. *University of Colorado Law Review*, 63, 921.
- Moss, S. (2018, September 22). Invisible killer: How one girl’s tragic death could change the air pollution story. *The Guardian*. <http://www.theguardian.com/environment/2018/sep/22/invisible-killer-how-one-girls-tragic-death-could-change-the-air-pollution-story>
- Murray, L., Pushor, D., & Renihan, P. (2012). Reflections on the ethics-approval process. *Qualitative Inquiry*, 18(1), 43–54. <https://doi.org/10.1177/1077800411427845>
- Mutiarni, Y. S., Nakamura, H., & Bhattacharya, Y. (2022). The resilient community: Strengthening people-centered disaster risk reduction in the Merapi volcano community, Java, Indonesia. *Sustainability*, 14(2215), 1–28. <https://doi.org/10.3390/su14042215>
- mycitizensnews. (2012, May 15). Website promotes transition of Naugatuck River. *Citizen’s News*. <https://www.mycitizensnews.com/news/website-promotes-transition-of-naugatuck-river/>
- National Indian Health Board. (2022). *About us*. National Indian Health Board. [https://www.nihb.org/about\\_us/about\\_us.php](https://www.nihb.org/about_us/about_us.php)
- Naugatuck River*. (2014, April 15). [Broadcast TV]. FOX CT.
- Naugatuck River Association. (2017, February 7). *Geography and history: Naugatuck River*. <https://naugatuckriver.net/index.php/about-the-river/geography-and-history/>

- Naugatuck Valley Council of Governments. (2022). *The effort to restore migratory fish to the Naugatuck River* [StoryMap]. NVCOG. <https://storymaps.arcgis.com/stories/32f5a3dd80bb42b480b8b4263a5c7e77>
- Neil, J. (2017). Digital auto-ethnography. *PRISM: Casting New Light on Learning, Theory and Practice*, 1(1), Article 1. <https://doi.org/10.24377/LJMU.prism.vol1iss1article299>
- Ngunjiri, F. W., Hernandez, K.-A. C., & Chang, H. (2010). Living autoethnography: Connecting life and research. *Journal of Research Practice*, 6(1), Article 1.
- Nixon, R. (2011a). *Slow violence and the environmentalism of the poor*. Harvard University Press. <http://www.jstor.org/stable/j.ctt2jbsgw>  
<https://doi.org/10.4159/harvard.9780674061194>
- Nixon, R. (2011b). Slow violence and environmental storytelling. *Nieman Storyboard*. <https://niemanstoryboard.org/stories/slow-violence-and-environmental-storytelling/>
- Nolan, J. E. S., Coker, E. S., Ward, B. R., Williamson, Y. A., & Harley, K. G. (2021). “Freedom to breathe”: Youth participatory action research (YPAR) to investigate air pollution inequities in Richmond, CA. *International Journal of Environmental Research and Public Health*, 18(2), Article 2. <https://doi.org/10.3390/ijerph18020554>
- Occupational Safety and Health Administration. (2022). *Hazardous waste operations and emergency response (HAZWOPER) Overview*. <https://www.osha.gov/emergency-preparedness/hazardous-waste-operations>
- Okazaki, K., & Shaw, R. (2003). Empowerment of local people for sustainable disaster mitigation: Experiences of developing countries. *Regional Development Dialogue*, 24(1), 3–14.
- Oktari, R. S., Shiwaku, K., Munadi, K., Syamsidik, & Shaw, R. (2018). Enhancing community resilience towards disaster: The contributing factors of school-community collaborative network in the tsunami affected area in Aceh. *International Journal of Disaster Risk Reduction*, 29, 3–12. <https://doi.org/10.1016/j.ijdrr.2017.07.009>
- O’Lear, S. (2016). Climate science and slow violence: A view from political geography and STS on mobilizing technoscientific ontologies of climate change. *Political Geography*, 52, 4–13. <https://doi.org/10.1016/j.polgeo.2015.01.004>
- O’Lear, S. (2018). *Environmental geopolitics*. Rowman & Littlefield.
- Outka, U. (2005). Environmental injustice and the problem of the law. *Maine Law Review*, 57(1), 209–258.
- Ozkazanc, S., & Yuksel, U. D. (2015). Evaluation of disaster awareness and sensitivity level of higher education students. *Procedia - Social and Behavioral Sciences*, 197, 745–753. <https://doi.org/10.1016/j.sbspro.2015.07.168>

- Pain, R. (2019). Chronic urban trauma: The slow violence of housing dispossession. *Urban Studies*, 56(2), 385–400. <https://doi.org/10.1177/0042098018795796>
- Pain, R., & Cahill, C. (2022). Critical political geographies of slow violence and resistance. *Environment and Planning C: Politics and Space*, 23996544211052052. <https://doi.org/10.1177/23996544211052051>
- Park, S. (2022a). The politics of 21<sup>st</sup> century environmental disasters. *Environmental Politics*, 31(1), 1–7. <https://doi.org/10.1080/09644016.2021.2024718>
- Park, S. (2022b). The role of the sovereign state in 21<sup>st</sup> century environmental disasters. *Environmental Politics*, 31(1), 8–27. <https://doi.org/10.1080/09644016.2021.1892983>
- Pennebaker, J. W. (2004). *Writing to heal: A guided journal for recovering from trauma & emotional upheaval* (1st edition). New Harbinger Publications, Inc.
- Pennebaker, J. W., & Evans, J. (2014). *Expressive writing: Words that heal*. Idyll Arbor.
- Pennebaker, J. W., & Smyth, J. M. (2016). *Opening up by writing it down: How expressive writing improves health and eases emotional pain* (3rd ed.). Guilford Publications.
- Perez-Ramos, J. G., McIntosh, S., Barrett, E. S., Vega, C. M. V., & Dye, T. D. (2021). Attitudes toward the environment and use of information and communication technologies to address environmental health risks in marginalized communities: Prospective cohort study. *Journal of Medical Internet Research*, 23(9), e24671. <https://doi.org/10.2196/24671>
- Perry, F. (2017, February 16). “You can taste it in the air”: Your stories of life in polluted cities. The Guardian. <http://www.theguardian.com/cities/2017/feb/16/taste-air-pollution-smog-your-stories-life-polluted-cities>
- Piguet, E. (2022). Linking climate change, environmental degradation, and migration: An update after 10 years. *WIREs Climate Change*, 13(1), e746. <https://doi.org/10.1002/wcc.746>
- Pitard, J. (2016). Using vignettes within autoethnography to explore layers of cross-cultural awareness as a teacher. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 17(11), Art. 11.
- Pitard, J. (2017). Autoethnography as a phenomenological tool: Connecting the personal to the cultural. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 1–17). Springer. [https://doi.org/10.1007/978-981-10-2779-6\\_48-1](https://doi.org/10.1007/978-981-10-2779-6_48-1)
- Pitard, J. (2019). Autoethnography as a phenomenological tool: Connecting the personal to the cultural. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 1829–1845). Springer Singapore. [https://doi.org/10.1007/978-981-10-5251-4\\_48](https://doi.org/10.1007/978-981-10-5251-4_48)

- Poerwandari, E. K. (2021). Minimizing bias and maximizing the potential strengths of autoethnography as a narrative research. *Japanese Psychological Research*, 63(4). <https://doi.org/10.1111/jpr.12320>
- Powers, M., Monson, M. J. E., Zimmerman, F. S., Einav, S., & Dries, D. J. (2019). Anthropogenic disasters. *Critical Care Clinics*, 35(4), 647–658. <https://doi.org/10.1016/j.ccc.2019.06.002>
- Preston, J., Chadderton, C., Kitagawa, K., & Edmonds, C. (2015). Community response in disasters: An ecological learning framework. *International Journal of Lifelong Education*, 34(6), 727–753. <https://doi.org/10.1080/02601370.2015.1116116>
- Priddis, H. S. (2015). Autoethnography and severe perineal trauma—An unexpected journey from disembodiment to embodiment. *BMC Women's Health*, 15(1), 88. <https://doi.org/10.1186/s12905-015-0249-3>
- Prior, L. (2003). *Using documents in social research*. Sage Publications. <http://site.ebrary.com/id/10668424> <https://doi.org/10.4135/9780857020222>
- Rawlins, L. S. (2017). Stranger and stranger: Living stories on others' doorsteps. *Departures in Critical Qualitative Research*, 6(4), 87–110. <https://doi.org/10.1525/dcqr.2017.6.4.87>
- Ray, S. J., & Sibara, J. (2017). *Disability Studies and the Environmental Humanities: Toward an Eco-Crip Theory*. U of Nebraska Press. <https://doi.org/10.2307/j.ctt1p6jht5>
- Reed-Danahay, D. (1997). Introduction. In D. Reed-Danahay (Ed.), *Auto/ethnography: Rewriting the Self and the Social* (1st ed., p. 224). Berg Publishers. <https://doi.org/10.4324/9781003136118-1>
- Reed-Danahay, D. (2021). *Auto/ethnography: Rewriting the self and the social*. Routledge. <https://doi.org/10.4324/9781003136118>
- Reisch, M. (2002). Defining social justice in a socially unjust world. *Families in Society: The Journal of Contemporary Social Services*, 83(4), 343–354. <https://doi.org/10.1606/1044-3894.17>
- Rice, J. (2016). Slow violence and the challenges of environmental inequality. *Environmental Justice*, 9(6), 176–180. <https://doi.org/10.1089/env.2016.0019>
- Richards, R. (2008). Writing the othered self: Autoethnography and the problem of objectification in writing about illness and disability. *Qualitative Health Research*, 18(12), 1717–1728. <https://doi.org/10.1177/1049732308325866>
- Richardson, L. (2001). Getting personal: Writing-stories. *International Journal of Qualitative Studies in Education*, 14(1), 33–38. <https://doi.org/10.1080/09518390010007647>
- Richardson, L., & St. Pierre, E. A. (2005). Writing: A method of inquiry. In N. Denzin & Y. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed., pp. 959–978). Sage Publications Ltd.

- Rickenbacker, H., Brown, F., & Bilec, M. (2019). Creating environmental consciousness in underserved communities: Implementation and outcomes of community-based environmental justice and air pollution research. *Sustainable Cities and Society*, 47, 101473. <https://doi.org/10.1016/j.scs.2019.101473>
- Rico, G. (1991). *Pain and possibility* (1st edition). TarcherPerigee.
- Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4, 155–169. <https://doi.org/10.1007/BF01405730>
- Ritter, S. (2013, November 28). *Tire inferno*. Chemical & Engineering News. <https://cen.acs.org/articles/91/i43/Tire-Inferno.html> <https://doi.org/10.1021/cen-09143-cover>
- Romm, N. (2018). *Responsible research practice: Revisiting transformative paradigm in social research*. Springer. <https://doi.org/10.1007/978-3-319-74386-8>
- Romm, N. R. A. (2015). Reviewing the transformative paradigm: A critical systemic and relational (Indigenous) lens. *Systemic Practice and Action Research*, 28(5), 411–427. <https://doi.org/10.1007/s11213-015-9344-5>
- Roulston, K. (2010). *Reflective interviewing: A guide to theory and practice* (1st edition). SAGE Publications Ltd. <https://doi.org/10.4135/9781446288009>
- Salmons, J. (2016). *Doing qualitative research online* (1st edition). SAGE Publications Ltd. <https://doi.org/10.4135/9781473921955>
- Schiavone, T. A. (2021). *A case study of the barriers experienced and overcome by female professionals in a STEM career* [Ph.D., Northcentral University]. <https://www.proquest.com/docview/2572595339/abstract/DFAB610B4EB64B70PQ/1>
- Schiltz, M. (2018). Science without publication paywalls: Coalitions for the realisation of full and immediate open access. *PLOS Medicine*, 15(9), e1002663. <https://doi.org/10.1371/journal.pmed.1002663>
- Schneider, K. (1990, March 2). Worst tire inferno has put focus on disposal problem. *The New York Times*. <https://www.nytimes.com/1990/03/02/us/worst-tire-inferno-has-put-focus-on-disposal-problem.html>
- Schwandt, T. A. (1996). Farewell to criteriology. *Qualitative Inquiry*, 2(1), 58–72. <https://doi.org/10.1177/107780049600200109>
- Scott, M. (2013). Resilience: A conceptual lens for rural studies? *Geography Compass*, 7(9), 597–610. <https://doi.org/10.1111/gec3.12066>
- Seeger, M. W., & Sellnow, T. L. (2016). *Narratives of crisis: Telling stories of ruin and renewal*. Stanford Business Books, an imprint of Stanford University Press.
- Seneviratne, T., Pathirage, C., Amaratunga, R., & Haigh, R. (2011). Disaster knowledge factors: Benefits and challenges. *Interdisciplinary Approaches to Disaster Risk Reduction, and*



- the Development of Sustainable Communities and Cities, July, 2011*. International Conference on Building Resilience 2011, Kandalama, Sri Lanka.  
<http://usir.salford.ac.uk/id/eprint/23366/1/23366.pdf>
- Serdencuk, L. A. (2019). *Clinical director perspectives on decision making of family involvement with clients at inpatient substance abuse treatment centers* [Dissertation, Nova Southeastern University]. [https://nsuworks.nova.edu/shss\\_dft\\_etd/51/](https://nsuworks.nova.edu/shss_dft_etd/51/)
- Shaluf, I. M. (2007). An overview on disasters. *Disaster Prevention and Management: An International Journal*, 16(5), 687–703. <https://doi.org/10.1108/09653560710837000>
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75. <https://doi.org/10.3233/EFI-2004-22201>
- Sietsma, A. J., Ford, J. D., Callaghan, M. W., & Minx, J. C. (2021). Progress in climate change adaptation research. *Environmental Research Letters*, 16(5), 054038.  
<https://doi.org/10.1088/1748-9326/abf7f3>
- Sikes, P. (2015). *Ethical considerations in autoethnographic research* [Specialist Research Ethics Guidance Paper]. [https://www.sheffield.ac.uk/polopoly\\_fs/1.586562!/file/SREGP-Autoethnography-2015.pdf](https://www.sheffield.ac.uk/polopoly_fs/1.586562!/file/SREGP-Autoethnography-2015.pdf)
- Singh, C., Iyer, S., New, M. G., Few, R., Kuchimanchi, B., Segnon, A. C., & Morchain, D. (2022). Interrogating ‘effectiveness’ in climate change adaptation: 11 guiding principles for adaptation research and practice. *Climate and Development*, 14(7), 650–664.  
<https://doi.org/10.1080/17565529.2021.1964937>
- Slattery, P., & Rapp, D. (2002). *Ethics and the Foundations of Education: Teaching Convictions in a Postmodern World* (0 edition). Allyn & Bacon.
- Smith, L. T. (2021). *Decolonizing methodologies: Research and Indigenous peoples*. Bloomsbury Academic & Professional. <http://ebookcentral.proquest.com/lib/antiochne-ebooks/detail.action?docID=6605401>
- Sneed, D. (2015, June 29). “Another 10 years”: *Guadalupe dunes still recovering from oil spill* [News Article]. San Luis Obispo Tribune.  
<https://www.sanluisobispo.com/news/local/environment/article39542613.html>
- Southard, M. R. (2010). *I’m Harrison’s mom: My personal experiences raising a child with autism* [Doctoral Dissertation, Wilmington University].  
<http://www.proquest.com/docview/250886357/339FD1FCF7CD47E5PQ/16>
- Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, 5(1), 25338. <https://doi.org/10.3402/ejpt.v5.25338>
- Sparkes, A. (2002). Autoethnography: Self-indulgence or something more? In A. P. Bochner & C. Ellis (Eds.), *Ethnographically Speaking* (pp. 209–232). AltaMira Press.

- Statista. (2020). *Biggest construction companies in Connecticut*. Statista.  
<https://www.statista.com/statistics/1195737/the-largest-connecticut-construction-companies/>
- Stewart, H. (2022). The ecological life of industrial waste. *Archaeological Papers of the American Anthropological Association*, 33(1), 91–105.  
<https://doi.org/10.1111/apaa.12159>
- The Guardian. (2020, December 9). Girl’s asthma death a “canary” warning for London pollution, inquest told. *The Guardian*.  
<http://www.theguardian.com/environment/2020/dec/09/girls-asthma-death-canary-warning-london-pollution-inquest-ella-kissi-debrah>
- Tidball, K. (2012). Urgent biophilia: Human-nature interactions and biological attractions in disaster resilience. *Ecology and Society*, 17(2). <https://doi.org/10.5751/ES-04596-170205>
- Tight, M. (2019). *Documentary research in the social sciences* (1st edition). SAGE Publications Ltd. <https://doi.org/10.4135/9781529716559>
- Tillmann-Healy, L. (1996). A secret life in a culture of thinness: Reflections on body, food, and bulimia. In A. P. Bochner & C. Ellis (Eds.), *Composing Ethnography: Alternative Forms of Qualitative Writing* (pp. 76–108). AltaMira Press.
- Tolich, M. (2010). A critique of current practice: Ten foundational guidelines for autoethnographers. *Qualitative Health Research*, 20(12), 1599–1610.  
<https://doi.org/10.1177/1049732310376076>
- Tonkiss, F. (2004). *Analysing discourse* (C. Seale, Ed.; pp. 245–260). Sage Publications, Ltd.  
<https://doi.org/10.1017/CBO9780511811760.017>
- Torrington Area Health District. (2022). *Overview*. TAHD.  
<https://www.tahtd.org/overview1.html>
- Torrington Downtown Partners. (2022). *About us*.  
<http://www.torringtondowntownpartners.com/about-us/>
- Tullis, J. A. (2013). Participant observation at the end-of-life: Reflecting on tears. *Health Communication*, 28(2), 206–208. <https://doi.org/10.1080/10410236.2012.699888>
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations Department of Economic and Social Affairs.  
<https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981>
- United Nations, & World Health Organization. (2018). *Time to deliver: Third UN high-level meeting on non-communicable diseases*. United Nations.  
<https://www.who.int/ncds/governance/third-un-meeting/brochure.pdf?ua=1>

- US Census Bureau. (2021, July 1). *U.S. Census Bureau quickfacts: City of Torrington, Connecticut*. <https://www.census.gov/quickfacts/torringtoncityconnecticut>
- Van Breda, A. D. (2001). *Resilience theory: A literature review* [Doctoral Dissertation, South African Military Health Service, Military Psychological Institute, Social Work Research & Development].  
[https://pathwaysu.com/pluginfile.php/13119/mod\\_resource/content/1/resilience2.pdf](https://pathwaysu.com/pluginfile.php/13119/mod_resource/content/1/resilience2.pdf)
- van der Schalie, W. H., Shedd, T. R., Knechtges, P. L., & Widder, M. W. (2001). Using higher organisms in biological early warning systems for real-time toxicity detection. *Biosensors and Bioelectronics*, *16*(7), 457–465. [https://doi.org/10.1016/S0956-5663\(01\)00160-9](https://doi.org/10.1016/S0956-5663(01)00160-9)
- van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. State University of New York Press.  
<http://ebookcentral.proquest.com/lib/antiochne-ebooks/detail.action?docID=3408268>
- Van Niekerk, D., Nemaokonde, L. D., Kruger, L., & Forbes-Genade, K. (2018). Community-based disaster risk management. In H. Rodríguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of Disaster Research* (pp. 411–429). Springer International Publishing.  
[https://doi.org/10.1007/978-3-319-63254-4\\_20](https://doi.org/10.1007/978-3-319-63254-4_20)
- Varga, S., & Guignon, C. (2020). Authenticity. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Spring 2020). Stanford University.  
<https://plato.stanford.edu/archives/spr2020/entries/authenticity/>
- Verchick, R. R. M. (2012). Disaster justice: The geography of human capability. *Duke Environmental Law & Policy Forum*, *23*, 49.
- Vorbrugg, A. (2019). Ethnographies of slow violence: Epistemological alliances in fieldwork and narrating ruins. *Environment and Planning C: Politics and Space*, *23*99654419881660. <https://doi.org/10.1177/2399654419881660>
- Wackers, G. (2016). Recursive health care structures and choice in the manner of our dying: An auto-ethnographic account. *Qualitative Health Research*, *26*(4), 452–465.  
<https://doi.org/10.1177/1049732315576498>
- Wakeham, P. (2021). The Slow violence of settler colonialism: Genocide, attrition, and the long emergency of invasion. *Journal of Genocide Research*, *0*(0), 1–20.  
<https://doi.org/10.1080/14623528.2021.1885571>
- Walker, J. L. G. (2012). *“I now pronounce you...Uhh”*: A qualitative autoethnographic exploration of women’s and men’s marital surname-choice experiences [Masters Thesis, Minnesota State University - Mankato].  
<https://cornerstone.lib.mnsu.edu/cgi/viewcontent.cgi?article=1049&context=etds>
- Wall, S. (2006). An autoethnography on learning about autoethnography. *International Journal of Qualitative Methods*, *5*(2), 146–160. <https://doi.org/10.1177/160940690600500205>

- Wall, S. (2008). Easier said than done: Writing an autoethnography. *International Journal of Qualitative Methods*, 7(1), 38–53. <https://doi.org/10.1177/160940690800700103>
- Waterhouse, C. (2009). Abandon all hope ye that enter? Equal protection, Title VI, and the divine comedy of environmental justice. *Fordham Environmental Law Review*, 20(1), 51–113.
- Willett, J. (2015). *Experiences of slow violence in poor Kenyan communities: Micro disasters, formalized aid responses, and community support through social networks* [Doctoral Dissertation, University of Connecticut]. <https://opencommons.uconn.edu/dissertations/776>
- Willett, J., Tamayo, A., & Rayo, A. (2021). Making the invisible visible: Documenting slow violence through photovoice with youth in Nevada. *Journal of Community Practice*, 29(2), 112–132. <https://doi.org/10.1080/10705422.2021.1938327>
- Williams, E. H. (2019). *Miscarriages of justice: Examining environmental reproductive injustices within Native American communities* [Undergraduate Research, University of Oregon]. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/25069>
- Williams, P. T., & Taylor, D. T. (1993). Aromatization of tyre pyrolysis oil to yield polycyclic aromatic hydrocarbons. *Fuel*, 72(11), 1469–1474. [https://doi.org/10.1016/0016-2361\(93\)90002-J](https://doi.org/10.1016/0016-2361(93)90002-J)
- Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Fernwood Publishing; WorldCat.org. <http://catdir.loc.gov/catdir/toc/fy1002/2008431436.html>
- Wolcott, H. F. (1999). *Ethnography: A way of seeing*. AltaMira Press.
- World Economic Forum. (2022). *The global risks report 2022* (17th ed). World Economic Forum.
- Wright, A. L., Gabel, C., Ballantyne, M., Jack, S. M., & Wahoush, O. (2019). Using Two-Eyed Seeing in research with Indigenous people: An integrative review. *International Journal of Qualitative Methods*, 18, 1–19. <https://doi.org/10.1177/1609406919869695>
- Yin, R. K. (2008). *Case study research: Design and methods* (4th edition). SAGE Publications, Inc.
- Zamir, S. (1995). *Dark voices: W. E. B. Du Bois and American thought, 1888-1903*. University of Chicago Press. <https://press.uchicago.edu/ucp/books/book/chicago/D/bo3683757.html>
- Zimmermann, S. (2002). *Writing to heal the soul: Transforming grief and loss through writing*. Harmony.

# APPENDICES

## Appendix A



Completion Date 12-Aug-2021  
Expiration Date 11-Aug-2024  
Record ID 21679822

This is to certify that:

**TARA HOLMBERG**

Has completed the following CITI Program course:

**Human Participants in Research**

(Curriculum Group)

**AU New England - Human Participants in Research**

(Course Learner Group)

**2 - Refresher Course**

(Stage)

Under requirements set by:

**Antioch University**

Not valid for renewal of certification through CME.



Verify at [www.citiprogram.org/verify/?wcfid21401-f0a2-461c-8e57-22182ef124c4-21679822](http://www.citiprogram.org/verify/?wcfid21401-f0a2-461c-8e57-22182ef124c4-21679822)

## Appendix B

### Research Consent Form

Project Title: “It Permeated Everything: A Lived Experience of Slow Violence and Toxicological Crisis”

Project Investigator (PI): Tara Jo Holmberg, MA, MEd, MS

Dissertation Chair: Elizabeth McCann, PhD

I am Tara Jo Holmberg, a student in the Environmental Studies PhD Program at Antioch University New England.

I am going to give you information about the study and invite you to be part of this research. You may talk to anyone you feel comfortable talking with about the research and take time to reflect on whether you want to participate or not. You may ask questions at any time.

### **Purpose of the research**

As part of this degree, I am completing a project to identify what political, cultural, socioeconomic, historical forces not only precipitated the events of the O&G/Toce Inc warehouse fire beginning April 3rd, 2014, but also sustained a slow, nonchalant, response to this anthropogenic disaster in a residential neighborhood; examine the personal impacts of slow environmental violence, including those involving health, relationships, property, biophilia, financial, and legal; and discuss the ongoing process of resilience and recovery.

This information may allow researchers to better understand the wide-ranging impacts of toxicological events on individuals.

### **Type of Research Intervention**

This research will involve your participation in a 1-2 hour Zoom conversation, where we will discuss your memories of the aforementioned events and my reactions to them. Each of these interviews will be recorded solely for research purposes. All participants’ contributions will be de-identified prior to publication or the sharing of the research results. These recordings, and any other information that may connect you to the study, will be kept in a password-protected, dual authenticated, secure location.

### **Participant Selection**

You are being invited to take part in this research because you are a colleague and were part of the circle of people I spoke to during 2014-2018. You should not consider participation in this research if participating makes you uncomfortable in any way or you do not feel you can be honest in your assessments or memories of that time.

### **Voluntary Participation**

Your participation in this study is completely voluntary. You may choose not to participate. You may withdraw from this study at any time. If an interview has already taken place, the information you provided will not be used in the research study.

### **Risks**

No study is completely risk free. Possible risks are discussing experiences that are traumatic to the PI and discussing the warehouse fire of April 3rd, 2014 and events beyond which may hold negative memories for you. However, I do not anticipate that you will be harmed or distressed during this study. You may stop being in the study at any time if you become uncomfortable.

### **Benefits**

There will be no direct benefit to you, but your participation may help others in the future.

### **Reimbursements**

You will not be provided any monetary incentive to take part in this research project.

### **Confidentiality**

All information will be de-identified, so that it cannot be connected back to you. Your real name will be replaced with a pseudonym in the write-up of this project, and only the primary researcher will have access to the list connecting your name to the pseudonym. This list, along with recordings of the discussion sessions, will be kept in a secure location. Personal identifiers will be removed and the de-identified information may be used for future research without additional consent.

### **Future Publication**

The PI, Tara Jo Holmberg reserves the right to include any results of this study in future scholarly presentations and/or publications. All information will be de-identified prior to publication.

### **Review**

1. I understand that this study is of a research nature. It may offer no direct benefit to me.
2. Participation in this study is voluntary. I may refuse to enter it or may withdraw at any time without creating any harmful consequences to myself. I understand also that the PI may drop me at any time from the study.
3. As a participant in the study, I will be asked to take part in the following procedures:
  - a. Reflexive conversation with the Project Investigator, Tara Jo Holmberg, about her experiences regarding the O&G/Toce Inc warehouse fire of April 3<sup>rd</sup>, 2014 and the aftermath. Participation in the study will take ~1 hour of my time and will take place via Zoom.
4. The risks, discomforts and inconveniences of the above procedures might be:
  - a. Discussing experiences that are traumatic to the PI;
  - b. Discussing the warehouse fire of April 3<sup>rd</sup>, 2014 and events beyond which may hold negative memories for you.

5. The possible benefits of the procedure might be:
  - a. Future benefits to others studying or affected by toxicological disasters.
6. Personal identifiers will be removed and the de-identified information may be used for future research without additional consent.
7. Information about the study was discussed with me by Tara Jo Holmberg. If I have further questions, I can email her at [REDACTED].
8. Though the purpose of this study is primarily to fulfill my requirement to complete a formal research project as a dissertation at Antioch University, I also intend to include the data and results of the study in future scholarly publications and presentations. Our confidentiality agreement, as articulated above, will be effective in all cases of data sharing.
9. This proposal has been reviewed and approved by the Antioch International Review Board (IRB), which is a committee whose task it is to make sure that research participants are protected. If you have any questions about your rights as a research participant, you may contact [REDACTED].

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

*A copy of this Informed Consent Form has been provided to the participant.*

PI \_\_\_\_\_ (Print)

PI \_\_\_\_\_ (Signature)

Date \_\_\_\_\_



## Appendix C

### Reflexive Dialogue Prompts

#### *Initial Conversation Prompts – Husband*

1. What are your first memories of the fire?
2. What do you remember those first couple of days like?
3. How do you feel I made sense of what was happening?
4. What do you feel was the most stressful part of those first few weeks for me?
5. What was the most stressful part of those first few weeks for you?
6. How were we able to manage as a couple and as a team?
7. After we move into the apartment, how did things change in terms of our priorities?
8. Why did you want to stop pursuing the legal case?
9. Why do you think I wanted to keep going?
10. When you look at where we are now, versus where we were, was it worth it?

#### *Initial Conversation Prompts – Colleagues*

1. What were your first impressions of the news of the tire fire on April 3<sup>rd</sup>, 2014?
2. What were our conversations about the tire fire like?
3. What aspects of my experience and the case did we discuss?
4. What was my general demeanor during these conversations?
5. What were/are your thoughts about my experience?

## Appendix D

### Response to the Indoor Environmental Assessment; Tire Plant Fire

#### Liberty Mutual Claim [REDACTED]

#### Holmberg Residence, 94 Albert St, Torrington, CT 06790

[REDACTED]

Tire fires are recognized by the National Fire Protection Association, state governments, and the Environmental Protection Agency as Hazardous Materials Incidents. Testing and recommendations should follow the Precautionary Principle, which is that the default conclusion of aftermath is that conditions are hazardous until 100% proven otherwise. The test results from the report produced by [REDACTED] do not support a clean, safe property as purported by Liberty Mutual. In fact, the analytical results point to any number of different particle types and tests that indicate the property is, indeed, contaminated from the tire fire on April 3rd at O&G's property next door (96 Albert St, Torrington, CT). Our position on the tests and results are below.

Regarding the air quality tests, these were not done under "living conditions". The house was perfectly still and only detected particles that remained in the air. With people and pets moving through the house, whatever particles had "settled out" would become airborne again and cause health issues. Particles from a tire fire are known to consist of the following size classes: suspended particulate matter (SPM), respirable suspended particles (RSP) <10  $\mu\text{m}$ , fine particles (<2.5  $\mu\text{m}$ ), ultrafine particles (<100 nm), and soot, all classified by the World Health Organization as a Group 1 Carcinogens. Particles/soot within the fine and ultrafine size range are known to settle in the alveolar sacs of the lungs, causing everything from asthma (which the owner already has), emphysema, lung cancer, etc., and may even travel to other target organs such as the heart, liver, and brain. (Kreyling, Semmler-Behnke, & Moller, 2006; National Institutes of Health, 2014)

Regarding the tape tests, the report stated "visible soot" but the particles of concern are not only what is visible. Carbon black is a primary compound of tire fires (Environmental Engineering & Contacting, 2002). Carbon black is also a known pollutant from tires fires, is present in sizes into the ultrafine scale, much smaller than the lower limit of 3  $\mu\text{m}$  measured by [REDACTED]'s air quality test. (US Department of Health and Human Services, 2006) These particles are shown to have demonstrated significantly greater inflammatory responses than fine (200 nm) particles and are considered a public health hazard. (US Department of Health and Human Services, 2006; Lemieux & Ryan, J.V., 1993; New York State Department of Health, 2013) Carbon black has been shown to be a carcinogen, and due to its large surface area, retains many other chemicals such as polycyclic aromatic hydrocarbons, benzene, dioxins, furans etc. that are suspected or known carcinogens (Environmental Engineering & Contacting, 2002; Centers for Disease Control, 1988). Carbon black produced by incomplete combustion of hydrocarbons is more carcinogenic than pure carbon black. (Wisconsin Poison Control Center, 2013) It can also cause

adverse health effects following inhalation, ingestion, or dermal exposure. (Centers for Disease Control, 1988)

Open tire fire emissions include "criteria" pollutants, such as particulates, carbon monoxide (CO), sulfur oxides (SO), oxides of nitrogen (NO), and volatile organic compounds (VOCs). They also include "non-criteria" hazardous air pollutants (HAPs), such as polynuclear aromatic hydrocarbons (PAHs), dioxins, furans, hydrogen chloride, benzene, polychlorinated biphenyls (PCBs); and metals such as arsenic, cadmium, nickel, zinc, mercury, chromium, and vanadium. Both criteria and HAP emissions from an open tire fire can represent significant acute (short-term) and chronic (long-term) health hazards to firefighters and nearby residents. Depending on the length and degree of exposure, these health effects could include irritation of the skin, eyes, and mucous membranes, respiratory effects, central nervous system depression, and cancer. (Clean Air Technology Center, 1997)

Considering the (a) relatively high mutagenic potency of the particulate organics, (b) high mutagenic emission factors, and (c) presence of many mutagens/carcinogens, especially PAHs, in the effluent from the open burning of tires, such burns pose a genuine environmental and health hazard. (Lemieux and DeMarini, 1992)

Uncontrolled open tire burning poses potential environmental effects by contamination of the soil, and ground and surface water. The two fire by-products, which pose a major concern, are the generation of pyrolytic oil and ash. (Cal Recycle, 1997)

Because of the starved-air conditions and the intense heat generated by an uncontrolled tire fire, pyrolytic reactions occur, producing a free-flowing, oily tar. This pyrolytic oil product consists of naphthalenes, anthracene, benzenes, thiazoles, amines, ethyl benzene, toluene, and other hydrocarbons. Also included are metals such as cadmium, chromium, nickel and zinc. This pyrolytic oil material can contaminate soil, and ground and surface water surrounding the site... Water applied to tire fires often increases the production of pyrolytic oil and provides a method of transport for the oils to move off site and accelerate contamination of soils and water. (Cal Recycle, 1997)

Controlled burns of chunked and whole tires produce more SVOCs (which are mutagenic and carcinogenic) than shredded tires in a study commissioned by the EPA in 1992 and 1993. (Lemieux & DeMarini, 1992; Lemieux & Ryan, J.V., 1993). Mutagens are of concern because "the induction of genetic damage may cause an increased incidence of genetic disease in future generations and contribute to somatic cell diseases, including cancer, in the present generation". (Amdur, 1991) In fact, the particulate organics were 2-10 times more mutagenic than that of the semi-volatile organics in the air emissions. When compared to other forms of combustion (oil, coal, wood, etc.) the mutagenic emission factor for tire fires is 3-4 orders of magnitude greater. This is due to poor combustion factors (made worse by the application of water and foam) which elevates the potentially harmful products of incomplete combustion (PICs).

PAHs are a large portion of the mutagenicity of the particulate contaminants. (National Institutes of Health, 2014) They are composed of a number of different non-criteria pollutants that are of concern due to their carcinogenicity and mutagenicity: naphthalene, acenaphthylene, acenaphthalene, fluorene, phenanthrene, anthracene, flouranthene, pyrene, benz(a)anthracene, chrysene, benzo(b) fluoranthrene, benzo(k) fluoranthrene, dibenz (a,h) anthracene, benzo (g,h,i) perylene, indeno(1,2,3-cd) pyrene. (Lemieux & Ryan, J.V., 1993) Benzopyrene is of particular concern due to its known carcinogenicity at low levels, as are dioxins (especially TCDD) and furans. (Clean Air Technology Center, 1997; National Institutes of Health, 2014) These studies were compared to particulate organics from open tire burns in Hagersville, Ontario and Winchester, VA; levels from the real-world scenario were very similar in types of mutagenic compounds and quantities as compared to the results of the EPA study. Dioxins and furans were found up in vegetation up to 200 meters downwind of the Hagersville fire more than 6 months after the end of the fire. (Cal Recycle, 1997)

Polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) are environmental contaminants detectable in almost all compartments of the global ecosystem in trace amounts. These compound classes in particular have caused major environmental concern. In contrast to polychlorinated biphenyls (PCB), polychlorinated naphthalenes (PCN), and other polychlorinated pesticides such as DDT, pentachlorophenol (PCP) or others, PCDD/PCDF never were produced intentionally. They are formed as by-products of numerous industrial activities and all combustion processes.

Almost all 210 individual congeners have been identified in emissions from thermal and industrial processes and consequently PCDD/PCDF are found as mixtures of individual congeners in environmental matrices such as soil, sediment, air, and plants and lower animals. PCDD/PCDF, particularly the higher chlorinated, are poorly soluble in water, have a low volatility, and adsorb strongly to particles and surfaces (high KOC). Thus, PCDD/PCDF can hardly be identified in water and are immobile in soils. Especially, the 2,3,7,8-chlorine substituted PCDD/PCDF are extremely stable in the environment and bioaccumulate in fatty tissues (high KOW) of animals and humans. (Fiedler, 1996)

The property has already been cleaned on the inside, however up to 70% of the particles measured on surfaces still remain, contradicting the description “low” in the discussion. The conclusion of “low” is concerning considering the independent analysis done by [REDACTED] states “high fire residue present” with “fine-soot-like particles – unable to quantify”. The independent report supports the likelihood that the particles found were of tire origin. Because HydroEnvironmental does not have comparison samples of combusted tire particles, but the closest match in appearance and chemical analysis is that of a tire particle, parsimony states that the simplest explanation is the most likely one. If the particles do not match any other known particle within a house, but most nearly matches that of a Michelin tire, the particles are most likely of tire origin, supporting the position that they consist of carbon black and the chemicals above. To conclude that the property must be safe because the samples do not 100% match the tire particles is erroneous.

In addition, the conclusion that no particles made it further into the house is contradicted by the results from the 'inside blue receptacle' which shows 14% compounds from the fire and was previously cleaned by Service Master. If the electrical box was cleaned, and was in an interior room of the house, particles have not only dispersed throughout the house but they are also continuing to move through the interior. It would be the smallest particles of the biggest concern that would move through these spaces and it would be very difficult to ensure that it does not continue to happen.

Photos of the property and items in the yard that are still coated in oil after 6 months of rain and weather are included in Appendix A.

There is no evidence that cleaning the inside of the property will make it safe, especially since there is pyrolytic oil and ash particles remaining on the exterior (see photos above), under the shakes (27.7% of particles found), in the yard, and on the O&G property (which was never remediated). Pyrolytic oil, a dermal irritant, cannot be power-washed off of the house (as it is oil-based) and should not be, considering the various compounds contained within the oil (listed above). (National Institutes of Health, 2014) Up to 2 gallons of pyrolytic oil are produced per tire in a fire, much of which ended up on our property through the air or runoff from the hoses. (Environmental Engineering & Contracting, 2002) Other property owners have tried powerwashing to no avail. In addition, after washing our vehicles twice through commercial car washing facilities (one of which stayed at the property throughout the entire fire), the pyrolytic oil has still not come off of the paint.

If particles are found inside of the property, they are also outside of the property (not tested for in the soil samples). However, it is a logical fallacy that because particles are found in both areas that it is safe to inhabit the property. In fact, the conclusion in the report, as well as in the literature, states to reduce bringing in contaminants from the outside, as well as to avoid contact with particulates/soot, chemicals and heavy metals from the fire (such as styrene, butadiene, benzene, chromium, cadmium, lead, arsenic, zinc, and mercury) and pyrolytic oil on the property. (Illinois Environmental Protection Agency, 2011; National Institutes of Health, 2014) We have landscaped much of the property and have gardened throughout, including growing much of our own food in raised bed gardens. This can no longer be done with the state of the soils (pyrolytic oil, particles, heavy metals, etc.) as exposure to soils after a tire fire is considered an indeterminate health hazard and the soils around the O&G property have not been capped and removed (the recommended remediation for contaminated soils). (US Department of Health and Human Services, 2006) Avoiding contact would make it impossible for us to enjoy our yard and gardens, have a pet, grow our own food, etc. Each activity would expose us as well as bring new material into the house. Our quality of life would be severely diminished as this was one of our main activities in the warmer months.

Regarding the soil tests, lead is a primary heavy metal contaminant from tire fires. The levels were highest nearest to the fire where the heaviest particles would be retained. There is no evidence that this is from paint on the house (painted 10 years ago directly on the shakes so no

lead paint is present), especially since the levels were so much lower in the garden nearest the house. The fact that the zinc and arsenic levels were also high supports the conclusion that the elevated lead was from the tire fire. Finally, testing only for heavy metals is only one part of the soil testing protocols after tire fires. Volatile organic (VOCs) and semi-volatile organic (SVOCs) compounds, as well as carbon black, should be tested for. These include: petroleum hydrocarbons, VOCs (ethylbenzene, styrene, toluene, xylenes), and SVOCs (naphthalene, 2-methylmapthalene, anthracene, pyrene, benzoic acid, methylmapthalene, para-isopropyl toluene).

Analyses of ash produced as a by-product of tire fires typically show the presence of heavy metals. High concentrations of metals such as lead, cadmium, and zinc are not uncommon. Fly ash has been shown to be rich in zinc, probably due to the fact that zinc is found in the curing agent during tire manufacturing. (Cal Recycle, 1997)

The EPA tests that should be used on soil samples after a tire fire include: (Environmental Engineering & Contracting, 2002)

CAM-17 Metals	EPA Method 6010
Total Recoverable Petroleum Hydrocarbons	EPA Method 418.1
Volatile Organic, GCMS Analysis	EPA Method 8260
Semi-volatile Organic, GCMS Analysis	EPA Method 8270
Dioxins and Furans	EPA Method 8280
Halogenated Volatile Organics (Potential compounds)	EPA Method 8010

Following the scientific literature and EPA recommendations, the property at 94 Albert St would need:

- New sheetrock and plaster (to remove remaining micron-sized particles that have worked into the walls and ceiling.
- New flooring (oil has been embedded in the floors throughout the home due to workers, etc. bringing oil in from the driveway and yard)
- New windows (to avoid the particles from the yard and O&G site from coming in)

- Extensive cleaning of the attic and cellar (was never done)
- All new siding (to remove the pyrolytic oil)
- A new roof (to remove the pyrolytic oil)
- New asphalt for the driveway (to remove the pyrolytic oil and oily particulates that can be tracked into the house)
- At least 2 feet of new topsoil throughout the property (to remove particulates as well as any materials/chemicals that have moved into the soil during the summer)
- Regular testing of the soil on the property (to ensure nothing is getting onto the property from the O&G site or the neighboring property)
- Extensive testing of O&G's property borders (which were not covered by topsoil during the cleaning process) (see below)

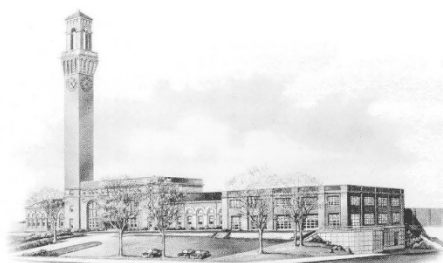
### Works Cited

- Amdur, M. (1991). Casarett and Doull's Toxicology: The Basic Science of Poisons (4th ed.). (M. Amdur, J. Doull, & C. Klaassen, Eds.) Pergamon Press.
- Cal Recycle. (1997). LEA Advisory #46 - Evaluation of Employee Health Risk from Open Tire Burning. Sacramento: State of California. Retrieved 2014, from <http://www.calrecycle.ca.gov/lea/Advisories/46/>
- Centers for Disease Control. (1988). Occupational Safety and Health Guideline for Carbon Black - Potential Human Carcinogen. Washington, D.C.: US Department of Health and Human Services. Retrieved 2014
- Clean Air Technology Center. (1997). Air Emissions from Scrap Tire Combustion. Washington, D.C.: US Environmental Protection Agency.
- Environmental Engineering & Contracting. (2002). Tire Pile Fires: Prevention, Response, Remediation. Santa Ana, CA: Integrated Waste Management Board. Retrieved 2014
- Fiedler, H. (1996). Sources and Environmental Impact of PCDD/PCDF. *Chemosphere*, 32(1), 55-64. Retrieved 2014
- Illinois Environmental Protection Agency. (2011). Tire Fires: Difficult to Extinguish, Expensive to Clean up, How to Protect Yourself. Springfield. Retrieved 2014
- Kreyling, W., Semmler-Behnke, M., & Moller, W. (2006). Ultrafine particle-lung interactions - does size matter? *Journal of Aerosol Medicine*, 19(1), 74-83. Retrieved 2014
- Lemieux, P., & DeMarini, D. (1992). Mutagenicity of Emissions from the Simulated Open Burning of Scrap Rubber Tires. Washington, D.C.: United States Environmental Protection Agency. Retrieved 2014
- Lemieux, P., & Ryan, J.V. (1993, August). Characterization of Air Pollutants Emitted from a Simulated Scrap Tire Fire. *Journal of the Air & Waste Management Association*, 43, 1106-1115. Retrieved 2014, from <http://dx.doi.org/10.1080/1073161X.1993.10467189>
- National Institutes of Health. (2014). Tox Town - Crude Oil. Washington, D.C. Retrieved 2014
- National Institutes of Health. (2014). Tox Town - Dioxins. Washington, D.C. Retrieved 2014
- National Institutes of Health. (2014). Tox Town - Particulate Matter. Washington, D.C. Retrieved 2014

- National Institutes of Health. (2014). Tox Town - Polycyclic Aromatic Hydrocarbons (PAHs). Washington, D.C. Retrieved 2014
- National Institutes of Health. (2014). Tox Town - Styrene. Washington, D.C. Retrieved 2014
- New York State Department of Health. (2013). Exposure to Smoke from Fires. Albany. Retrieved 2014
- US Department of Health and Human Services. (2006). Health Consultation: Watertown Tire Fire, Town of Shields, Dodge County, WI. Public Health Service, Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation. Atlanta: US Department of Health and Human Services. Retrieved 2014
- Wisconsin Poison Control Center. (2013). Carbon Black. Madison: Wisconsin Department of Health Services. Retrieved 2014



## Appendix E



Republican-American  
AND  
SUNDAY REPUBLICAN

TELEPHONE (203) 574-3636

389 MEADOW STREET WATERBURY, CT 06722-2090

*Members*  
AUDIT BUREAU OF CIRCULATIONS

Dec. 5, 2022

This letter affirms that the Republican-American has granted Tara Holmberg the rights to use five photographs relating to the 2014 Toce Brothers warehouse fire in her dissertation.

Ben Sodergren, Librarian  
Republican-American