Infrastructural Imaginaries:
Highways and the Sociotechnical Production of Space in Baltimore

Amanda Kirsten Phillips

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
In
Science and Technology Studies

Daniel Breslau, Chair
Barbara Allen
James Collier
Richard Hirsh

September 12th, 2018
Blacksburg, Virginia

Keywords: Infrastructure, Highways, Baltimore, Space, Freeway Revolts

Infrastructural Imaginaries:
Highways and the Sociotechnical Production of Space in Baltimore

Amanda Kirsten Phillips

The highway, its promise of freedom and mobility, stands as a source of intrigue in American culture. Yet, the asphalt and dashed lines that cut across the country conceal the contentious history that accompanied interstate highway construction. This dissertation examines the social and spatial meanings of interstate highway plans in the United States at different historical and geographic scales. This account begins in the late 1930's and travels through the mid 1940's where I discuss Norman Bel Geddes's 1939 Worlds Fair Exhibit, 'Futurama' and Robert Moses's 1944 *Baltimore Arterial Report.* This analysis demonstrates how each man inscribed social values into proposed developments within geographic space. From here I move to Baltimore where from 1944 until about 1979, countless proposals called for the construction of an arterial highway that would cut into the heart of the city. By drawing from the archival records left by Movement Against Destruction (MAD), Relocation Action Movement (RAM), and other groups in that fought against roadway plans in Baltimore, I explore how activists lived, understood, and challenged the new social arrangements embedded in the proposed highway system.

I introduce the term infrastructural imaginaries to account for how the proposal or construction of spatially embedded systems seeks to transform lived material and geographic arrangements. The concept of infrastructural imaginaries expands upon Sheila Jasanoff and San-Hyun Kim's 'sociotechnical imaginaries' to address how proposed futures appropriate spatial environments and how people lived, understood, and conceptualize themselves within these emergent spaces. The framework of infrastructural imaginaries utilizes Henri Lefebvre's conceptual triad of spatial practice, representations of space, and representational space to analyze the dynamic interactions between infrastructure planning, lived experience, and articulations of possible futures. To study the infrastructural imaginary, the immaterial form, provides a fertile space from which to isolate places where systems fail to take hold, where alternative understanding emerge, and where new forms social interaction takes place.

Infrastructural Imaginaries:
Highways and the Sociotechnical Production of Space in Baltimore

Amanda Kirsten Phillips

The interstate highway, its promise of freedom and mobility, stands as a source of intrigue in American culture. Yet, the asphalt and dashed lines that cut across the country conceal the contentious history that accompanied interstate highway construction. Following the passage of the 1956 Federal Aid Interstate Highway Act movements called 'freeway revolts' began in cities across the United States. These protests resisted the construction of highways in urban areas. Additionally, these social movements called attention to the planning practices that condemned the houses of low income and minority populations, clear-cut park land, and disrupted the urban fabric. This dissertation examines Baltimore's 'freeway revolt' using archival documents left by the many activist groups who participated in attempting to stop the highway. Rather than presenting a comprehensive history of these events, this dissertation pays attention to how social understandings of geographic space contributed to highway plans, organized activism, and the practices of those who lived under the threat of impending infrastructure.

Abbreviation List

ANT – Actor Network Theory

DOT – Department of Transportation

EIS – Environmental Impact Statement

FHWA – Federal Highway Administration

LTS - Large Technological Systems

MAD – Movement Against Destruction

PPM – Policies and Procedure Memorandum

PUS – Public Understanding of Science

RAM – Relocation Action Movement

SCAR – Southeast Council Against the Road

SCOT – Social Construction of Technology

SOM – Skidmore, Owings & Merrill

UDCT – Urban Design Concept Team

VOLPE – Volunteers Opposing the Leakin Park Expressway

Figure List

Dedication

To Baltimore. To its unfinished highways, its infrastructural wraiths, and its promises for a better future.

Acknowledgements
All labor, even the lonely task of writing a dissertation, requires a network of support, feedback, and community. Those mentioned below are just a few in a team of many that pulled this document through long nights, revisions, and its many iterations.

Brioche, my grumble pig. Although you dole out your affection as it suits you, your companionship is unmatched. Thank you for lounging across the room as I wrote.

Caroline, Britney, Liz, Carrie, and the Virginia Tech Club Water Polo Team. Thank you for welcoming me to the world of sports and giving me insight into the joys of Virginia Tech.

Austin, Jonathan, Marie, and the countless friends I have made in graduate school. Thank you for challenging, listening, and the occasional dig through newspaper archives.

Richard Hirsh. Thank you for challenging me to write with brevity and without the verb 'to be.'

James Collier. Thank you for the kindred cynicism, the blunt advice, and sharing your passion for a sometimes-frustrating field of study.

Barbara Allen. Thank you for the endless professional support, constant intellectual probing, and your confidence in the face of steep odds.

Daniel Breslau, Committee Chair and Advisor. When I was assigned to be your advisee I'm sure you had no idea what a stubborn student you had been paired with. Thank you for giving me the freedom to pursue my interests and the guidance to clarify my ideas, concepts, and subject matter. Thank you for the work you put in so that I could accelerate my timeline and defend in such a short period of time. Thank you for occasionally taking the time at meetings to chat about baseball.

Caryn and James Phillips, Mother and Father. To pursue a Ph.D. is a great privilege and your endless support has been a constant in helping me achieve this goal. Thank you for never doubting in my direction, passion, and holding me up during the challenging moments.

Aubrey Phillips, Sister. You are a partner in the commiseration of higher education. It has been a joy to watch you develop your ideas, grow intellectually (if not vertically), and build great things in this troubled world.

Juan Francisco Lucas, Husband. You have been by my side since before I choose to move 8 hours away to embark on this journey. Thank you for the hours spent on highways, the evenings spent consoling me through the darkest times, and always providing snacks when they are needed. I look forward to driving through a life of hurricanes with you.

Coffee. Thank you for existing. This document would not exist without you.

If you were mentioned on this page, it means you have to read my dissertation. Nailed it.

Table of Contents

Preface

Highways, more than other infrastructure systems, ignite a curious intrigue within American culture. From Robert Johnson's retelling of the origin of blues in 'Crossroads' to the Talking Heads' harmonic and drivingly repetitive 'Road to Nowhere', the sonority, movement, and mechanical cadence of highway travel has infused itself in the rhythms and melodies of musical language. A similar trend follows in literature. Jack Kerouac's *On the Road* and Hunter S. Thompson's *Fear and Loathing in Las Vegas*, for example, turn roads into characters, actors, and agents within parables of the American experience. The endless list of movies, television shows, songs, books, poems, and other media that draw together the road with social experience demonstrates the deep mythos that has emerged alongside these structures.

These same roads also inspired Sam Cooke's 'Chain Gang'. In this song, he oscillates between his characteristic soulful crooning and the rhythm of 'Hooh ahh, hooh ahh', mimicking the cadence and punctuating chants of the work songs sung by prison laborers. Cooke sings over the chant, "All day long they work so hard, Till the sun is goin' down, Working on the highways and byways, And wearing, wearing a frown, You hear them moanin' their lives away, Then you hear somebody sa-ay…." Cooke's description of the labor that helped to build the mythologized U.S. interstate system points to another side of the highway. This story does not emphasize freedom, mobility, or adventure – rather it demonstrates how roads carry along their paved surfaces conflicting meanings and legacies. More so, his song grounds the conditions of penal labor into the landscape, embodying a specific space within a historical period of time. Highways, as technological systems, are generative not only of artistic creativity, but of different experiences,

mobilities, and understandings – ones that stretch across conflicting environmental and temporal horizons.

I came to study highways because of this generative potential, but also through a continuous academic fascination with the relationship between spatial environments and social experience. Bruno Latour's famous description of the door 'groom' in 'Where are the Missing Masses? The Sociology of a Few Mundane Artifacts' serves as the genesis of this interest. Latour's characteristic wit comes forth in this article as he describes how a seemingly simple object, an automatic door closer, both makes possible and forecloses certain social interactions. He writes,

> To be sure, the hydraulic door closer does not bang the noses of those unaware of local conditions, so its prescriptions may be said to be less restrictive, but it still leaves aside segments of human populations: neither my little nephews nor my grandmother could get in unaided because our groom needed the force of an able-bodied person to accumulate enough energy to close the door later…. Also, if there is no way to keep them open for good, they discriminate against furniture removers and in general everyone with packages, which usually means, in our late capitalist society, working- or lower-middle-class employees.[1]

[1] Bruno Latour, "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts." In *Technology and Society, Building Our Sociotechnical Future.*, edited by Deborah J Johnson and Jameson M. Wetmore (Cambridge, Massachusetts: MIT Press, 2008), 158-159.

In this particular section, Latour discusses delegation, the transfer of human tasks to nonhuman objects, and prescription, "the moral and ethical dimension of mechanisms"[2] to describe their impact on social interactions. Yet, what drew me to this analysis, was how the delegation of the social to technological objects also opened up new ways of experiencing the world, of interacting with it, and living in technologically mediated environments. This fascination is what eventually brought me to the field of Science and Technology Studies where the examination of these processes have come to constitute an entire discipline of academic study.

Additionally, Latour's provocation also demonstrated that the experience and interaction with technologies produces differentiation based on physical location, bodily capability, or social standing. Around this same time, I also was introduced to another, equally confounding, French theorist, Henri Lefebvre. Lefebvre's most enduring concept, one that continues to gain relevance into the current day, is his discussion of the production of space, where he argued that social forms of production are inscribed in space itself. Lefebvre, drawing heavily from Marx, argues that developing a praxis for social change requires also changing the means and the mechanisms of the production of space itself.[3] Lefebvre's critical perspective was generative in helping me think through how the study of technological objects and systems might be expanded to consider their spatial resonances as well.

---

[2] Ibid, 157.

[3] Henri, Lefebvre. *The Production of Space*. (Maiden, MA: Blackwell Publishers, 1991), 59.

One of the great strengths of STS is its continued commitment towards understanding the multiplicity and complexity of technological social, and cultural forms. Yet, this commitment has rarely been brought into conversation with Lefebvre's ideas regarding the social production of social space. This dissertation, broadly, argues and suggests mechanisms for attuning to space within STS. To do so, I trace the emergence of the Interstate Highway System in the United States and subsequent interventions that aimed to stop highway development in Baltimore during the 1960's and 1970's.

Chapter Overview

Chapter One presents a literature review that examines early trajectories and methodologies within the History and Sociology of Technology. Here I emphasize how early work in the field conceptualized social production – often to the exclusion of social understandings of space. This analysis is brought into conversation with studies of infrastructure, made popular by Susan Leigh Star and the more recent conceptualization of socio-technical imaginaries by Jasanoff and Kim. From here, I transition to a conversation regarding Lefebvre's work on the production of space and discuss his conceptual triad. Finally, I draw from work in political theory regarding the public and private sphere to demonstrate how attention to space in studies of infrastructure can help to reconfigure the relationship between the body, political interventions, and space itself. In this chapter, I introduce the term infrastructural imaginaries as an extension to Sheila Jasanoff and Sang-Hyun Kim's work to account for space within analysis of emergent or future oriented systems.

In Chapter Two I look at two early visions of highway building - Norman Bel Geddes's Futurama Exhibit at the 1939 World's Fair and Robert Moses 1944 *Baltimore Arterial Report*. Here I examine how Geddes and Moses understood the relationship between social life, spatial appropriation, and technological implementation in their distinct imaginaries for the future of highway systems through the remaking of urban space. This chapter serves as a prehistory to later accounts in this dissertation that examine resistance efforts and organized activism against urban highway building in Baltimore during the 1960's and 1970's. While Geddes did not try to design or incorporate Baltimore into his planning future, his *'Futurama'* exhibit marks a widely shared cultural moment in imagining what an interconnected system of highways might look like. In the case of Moses, his report provides one of the first visions for an east-west expressway through Baltimore, a route that proved incredibly controversial even when the report was first issued to the city council. Both visions embedded social understandings into space itself- thus producing distinct infrastructural imaginaries that sought to transform lived, conceived, and perceived environment through infrastructural implementation.

Chapter Three travels to Baltimore during the late 1960's. During this time city highway planners and engineers aimed to change the spatial environment of the city. The spatial organization of highways is then put into context with the 'freeway revolts' that occurred across the country to try and stop the development of urban highways. Additionally I examine how protesters perceived of contested space, to suggest that geographical difference proved a formative element of these responses to emergent infrastructures. My account then turns to the activities of Relocation Action Movement (RAM), one of the earliest organized 'freeway revolt' groups within the city of Baltimore.

RAM's work spoke to a future modality of urban life where displaced residents could continue to occupy urban space. Here I use archival materials from the Special Collections at the Langsdale Library at the University of Baltimore to examine how the group made use of social understandings of space to challenge the routing choices proposed by the city.

Chapter Four moves scales to trace the activities of Movement Against Destruction (MAD), a later group that fought against highway implementation in Baltimore. Here I analyze how the collective ambitions of MAD formed, not through an integration of perspectives, but rather through the social and spatial differentiation of geographic regions and political priorities. I discuss how the different groups that made up MAD often drew from they geographic origin in the city to structure their political goals. I argue that coalition building took place across different and intersecting geographic spheres, while also emerging out of these formations as well. This chapter also looks at how expert knowledge, passed on to the group through a team of designers and architects, informed the tenor of political tactics used by the group in attempts to stop the road.

The fifth chapter brings together earlier discussions of infrastructural imaginaries, differentiation, and abstraction to examine legal interventions against highway building nationally and within the city of Baltimore. During this time, MAD brought a case against the federal government that challenged administrative highway planning practices and procedures. This chapter examines how federal decisions redefined possible land uses in highway development and how MAD attempted to translate their socio-spatial values into the juridical realm. I draw upon an affirmative critique of abstraction to suggest that utilizing the analytic of infrastructural imaginaries can work towards understanding how

practices of abstraction and differentiation come to constitute the creative process in developing or suggesting alternative material futures.

Chapter One – Infrastructures, STS, and the Spatial Turn

I: From 'Messy Complexity' to Methodological Coherence

When describing early electric and power systems, Thomas Hughes remarks that these technologies take "on a messy complexity because of the heterogeneity of their components."[4] Here Hughes points to an early disciplinary question in STS: how can we begin to study and classify the many diverse social, technical, and political components that come to constitute large technical systems? Research programs including Hughes's systems theory, Social Construction of Technology (SCOT), and Actor-Network-Theory (ANT) argued for differing methodological approaches that could make sense of robust relationships between social organization and the emergence of technological systems. In response to this early work, scholars including Susan Leigh Star, Geoffrey Bowker, and James Griesemer developed methodologies specifically attuned to understanding how these infrastructural technologies support, maintain, and constitute social interaction – and in turn how socio-cultural processes shape systems as they emerge, grow, and solidify.

Within these foundational studies of systems and infrastructures, little attention has been focused towards understanding the relationship between technological systems and the social production of space. The work of Henri Lefebvre, the theorist who developed a robust understanding of the production of space, has seen a recent resurgence in disciplines such as geography, urban planning, and legal theory. Lefebvre's larger project demonstrated the historical processes that come to constitute the spatial realm. He writes; "social space is constituted neither by a collection of things or an aggregate of (sensory)

---

[4] Thomas Hughes. "Technological Momentum." *Does Technology Drive History? The Dilemma of Technological Determinism* (Cambridge, MA: MIT University Press, 1994), 104.

data, nor by a void packed like a parcel with various contents, and that it is irreducible to a 'form' imposed upon phenomena, upon things, upon physical materiality".[5] From here he argues that space emerges out of a trio of processes; spatial practice, representations of space, and representational space. This conceptual triad accounts for multiple scales within the production of spatial meaning. In many ways, the general impulse of Lefebvre's work, to resist understandings of spatial determinism produced through material or epistemological orderings of physical landscapes, parallels the early work in STS that resisted understanding technological systems as deterministic of social organization and interaction.

The goal of this literature review is to integrate early methodologies and concepts for studying infrastructure with Lefebvre's conceptual triad concerned with the production of space. As the dissertation progresses, I will move between different cases to examine how plans for transforming geographic space through the construction of interstate highways influenced social values, organization, and forms of organized resistance. I examine how early methodologies in STS that sought to demonstrate the role of social processes, users, and groups came to shape the priorities of the sub-field of infrastructure studies. This review aims not only to provide an overview of key approaches, but also to understand their professed goals in developing such frameworks. Following this, I further discuss Lefebvre's conceptual triad of spatial production, as well as contextualize his work in more recent work in STS that examines space and place. These processes within the social production of space shape discussions as I move into later chapters. Finally, I work to

[5] Lefebvre, *The Production of Space*, 27.

integrate these two approaches utilizing work in such as social, political, and critical theory that have wrestled with the question of space in relation to new or novel systems.

II: Early Methodologies in STS and Infrastructure Studies

Science and Technology Studies and related fields such as anthropology and social theory have recently seen renewed interested in studies exploring the role of infrastructure and social life. Many of these studies find their origin in the 1999 article, 'Ethnography of Infrastructure' by Susan Leigh Star. In this essay, she suggests an innovative way to account for technological infrastructures in cultural life. She implores her audience to study the systems hidden in the background, the invisible, but essential conduits of culture. This oft-cited and debated essay still influences how scholars study infrastructural systems and what questions get asked in the process. She argues that by accounting for infrastructure in ethnographic accounts, scholars produce richer cultural narratives while also building a toolset better suited to understanding a technologically interconnected world. Paying attention to infrastructure provides an ecological perspective of culture not normally obtained through traditional fieldwork and participant observation. [6] Star's proposed methodology suggests reading and subsequently deconstructing the cultural meanings, values, and assumptions that guide the building of a system.

Star's call to study infrastructure from a cultural perspective is mirrored in the historical work done by Thomas Hughes' analyses of Large Technological Systems (LTS). Both authors develop typologies--patterns of evolution by Hughes, and properties of

---

[6] Susan Leigh Star. "Ethnography of Infrastructure." *American Behavioral Scientist* 43, no. 3 (1999), 337.

infrastructure by Star--to isolate specific trends, processes, or categories that make up systemic assemblages. Additionally, both authors insist that systems coproduce each other. In the words of Hughes, LTS's are "socially constructed and society shaping."[7] Perhaps the most durable element of Hughes's analysis emerges with the concept of technological momentum. This analytic framework eschews a tendency in understanding large technical systems within the logic of determinism. Instead, he argues that the growth of systems also produces an increase in the number of human and technological participants in a given system. This in turn provokes a shared interest in continuing the system, thus arguing for the continued influence of social actors even as systems develop and becomes structurally embedded over time.

The Social Construction of Technology or SCOT approach serves as an equally important methodology adept at understanding how social action and meanings shape technologies. In describing this research program, Kline and Pinch write, "In SCOT, "relevant social groups" who play a role in the development of a technological artifact are defined as those groups who share a meaning of the artifact. This meaning can then be used to explain particular development paths."[8] Expanding on the SCOT program in 'The Social Construction of Facts and Artifacts', Trevor Pinch and Wiebe Bijker, look to understand how objects and knowledges shape broader social concerns. They write, "The sociocultural and political situation of a social group shares its norms and values, which in turn influence the meaning of a given artifact… SCOT's descriptive model seems to offer an

---

[7] Ibid, 51.

[8] Ronald Kline and Trevor Pinch. "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States." *Technology and Culture* 37, no. 4 (Oct. 1996), 765.

operationalization of the relationship between the wider milieu and the actual content of technology."[9] Social constructivist programs argue for the social as the primary means of understanding relationships to technology. These programs keep the central assertion that all technologies are socially constructed and stabilize the social as a mechanism for analysis even as the scope of inquiry extends to wider societal, political, or cultural contexts.

Clearly, Hughes's approach to large technological systems differs from social constructivist accounts in terms of both content and scale. Studies of LTS's primarily examine the emergence and processes of large systems emphasizing the role of engineers and other experts in their creation, while SCOT privileges the relationship between groups of users and a given artifact (or fact). Yet the social constructivist approach also emphasizes understanding the larger social system that unites artifacts, knowledges, users, and the 'wider milieu'. While Hughes classifies the whole of a given technological system, we might say that social constructivist approach works to understand the larger social system itself. Thus, each approach makes sense of the emergence and function of intertwined sociotechnical infrastructures.

Yet, within these accounts little emphasis is placed on understanding how users or system builders negotiate space as new social meanings emerge. Bruno Latour comes closest to accomplishing this analysis in his work that examines the mutual construction of nature and society. Latour developed a networked approach that takes aims to deconstruct

---

[9] Trevor Pinch and Wiebe Bijker. "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other." *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, MA: MIT University Press, 1997), 46.

the 'modern' ontological separation of humans on one hand and nonhumans on the other.[10] He stresses the importance of tracing networks of interactions, texts, materials, objects, and humans. A networked approach diffuses influence amongst multiple, perhaps an infinite amount, of intertwined actors. In *Science in Action*, he utilizes ethnographic methodologies when studying the process of work and experimentation in a scientific laboratory to understand meanings as they are created. Studying culture within a scientific space allows for understanding black boxes of scientific or technical knowledge prior to their closure within the larger social world. Latour focuses on microactions that take place within scientific processes from writing text[11] to its translation into technical objects[12] as constitutive of the larger networks.

In an article Star co-wrote with James Griesemer, the pair draw heavily from Latour and other network theorists to produce an ecological analysis "understanding the process of management across worlds: crafting, diplomacy, the choice of clientele and personnel."[13] Developed throughout the course of the article is an analytical concept called boundary objects. Boundary objects in Star and Griesemer's framing pertain to "scientific objects that inhabit several intersecting social worlds *and* satisfy the informational requirements of

---

[10] Bruno Latour. *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993), 12.

[11] Bruno Latour. *Science in Action* (Cambridge, MA: Harvard University Press, 1987), 25.

[12] Ibid, 64.

[13] Susan Leigh Star, and James R. Griesemer. "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39." *Social Studies of Science* 9, no. 3 (1989), 389.

each of them."[14] Boundary objects work by uniting heterogeneous knowledges, groups, and spaces while also producing them. Broadly, these objects allowed for interpretive flexibility based on the positionality (or social world) of the participant. Different participants unite around the same object, but utilize and contribute to the production of the object through different processes.

Simply, we might recognize here a fundamental tension in the then emergent framework of socio-cultural infrastructure studies. Scholars interested in studying systems needed to wrestle a way to integrate the networked and often homogenizing tendency of infrastructure with its relational differences to a variety of social actors or cultural forms. Infrastructures appear to produce sameness across spatial and temporal scales, yet the production of this sameness requires, in a Latourian sense, the enrollment of a wide variety of different actors, materials, and geographies. Thus, when studying infrastructure a need emerges to sort out a duel production of difference and homogeny.

In conceptualizing boundary objects, Star and Griesemer, located geographic difference within social processes rather than as a distinct mode of production. Boundary objects, and the systems they make up, were thus conceptualized to as *containing* the problems of geography, mobility, and distance. Take for instance the described boundary object of 'coincident boundaries'. "These are common objects that have the same boundaries but different internal contents. They arise in the presence of different means of aggregating data and when work is distributed over a large-scale geographic area."[15] Star and Griesemer use maps to demonstrate how drawing boundaries around an area, the state

---

[14] Ibid, 393.

[15] Ibid, 441.

of California for example, allows different groups to populate these boundaries with information grounded in their area of expertise. Thus, distance and space become negotiated through means of social interaction and contained within boundary objects. I point to this configuration just to note that the question of how systems work across space has long been a concern in infrastructure studies. Yet, those concerns reside within material and social forms themselves, rather than in the process that comes to constitute social space. The focus on socio-technical or socio-material relationships in infrastructure fails to fully grasp the symbolic dimensions of meaning that coalesce within space itself.

Although the foundational body of literature on infrastructure rarely accounts for the social production of space, other work in STS examines how space and place operate in relation to scientific and technological formations. For instance Ashley Carse, in discussing the manufacturing of the Panama Canal watershed demonstrates how the natural landscape and its geographic features become enmeshed within sociotechnical systems. He writes, "As nature becomes infrastructure through work, human politics and values are inscribed on the landscape as much as they are embedded in arrangements of steel and concrete."[16] His account traces how the production of watershed boundaries required both a conceptual (social) and geographic (spatial) extension of infrastructure in order to effectively manage the novel socio-technical environment. Thus, while the watershed attempted to produce a holistic or homogenous space, it incorporated a variety of different actors, environments, and materials. Similarly, a 2016 special issue of *Science, Technology,*

---

[16]Ashley Carse. "Nature as Infrastructure: Making and Managing the Panama Canal Watershed." *Social Studies of Science* 42, no. 4 (2012): 540.

and Human Values, 'Infrastructuring Environments', examines how lived environments interact with material, human, and performed structures. The goal of this work is "to open up a space for discussing and reflecting on emerging relations between infrastructures and the environment, attentive to the many world-making efforts played out at their conjuncture.[17] Both works seek to understand how infrastructures intertwine with natural landscapes. While the relationship between technological system and natural environment does not explicitly evoke the social production of space, the work does demonstrate how landscapes interact with and come to constitute infrastructural forms.

Additionally, within the Sociology and History of Science, the place 'where' science happens has long been scrutinized. Perhaps the most notable example of this comes from Shapin and Schaffer's *Leviathan and the Air Pump*. There the authors describe how the act of witnessing experiments contributed to collective acceptance of a scientific concept.

> In experimental practice, one way of securing the multiplication of witnesses was to perform experiments in a social space. The experiment "laboratory" was contrasted to the alchemist's closet precisely in that the former was said to be a public and the latter a private space.[18]

The space in which experiments took place and the social understandings of those spaces, informed the production of scientific knowledge. More recently, Christopher Henke and

---

[17] Blok, Anders, Moe Nakazora, and Brit Ross Winthereik. "Infrastructuring Environments." *Science as Culture* 25, no. 1 (2016), 3.

[18] Steven Shapin and Simon Schaffer. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life.* (Princeton, NJ: Princeton University Press, 2011), 57.

Thomas Gieryn argue that places where science happens deserve probing in analyses of scientific production. The authors situate themselves as a part of a fifth wave within the discipline that "tries to identify precisely how place has consequence for scientific knowledge and practices, and why a focus on geographic location and situated materialities can enlarge our understanding of science in society."[19] Place, though, differs slightly from space. As Gieryn makes clear in an earlier article, "Space is what place becomes when the unique gathering of things, meanings, and values are sucked out".[20] Although he acknowledges in a footnote that this understanding differs from Lefebvre's, Gieryn fails to account for why he dismisses this counter-theorization. His conceptualization of vacated space demonstrates that STS could do more to theorize space as a constituent element in the production of meanings, material, and value.

III: Henri Lefebvre's Conceptual Triad

The Production of Space, Henri Lefebvre's 1974 book where he lays out the framework for understanding the social production of space, was not translated into English until 1991. The book has since grown in popularity and influenced the work of many including notable critical theorists David Harvey and Edward Soja. Despite the vintage of the work, contemporary scholars continue to draw from Lefebvre's framework as a mechanism towards, in the words of Harvey, understanding the "ongoing struggles

---

[19] Christopher R. Henke and Thomas F. Gieryn. 'Site of Scientific Practice: The Enduring Importance of Place.' *The Handbook of Science and Technology Studies*. Ed E. Hackett, O. Amsterdamska, M. Lynch, J. Wajcman. (Cambridge, MA. 2008), Third Edition, 355.

[20] Thomas F. Gieryn,"A Space for Place in Sociology." *Annual Review of Sociology.* 26 (2000): 465.

over who gets to shape the qualities of daily urban life."[21] This focus was newly renewed in the following the 2008 economic collapse and movements such as Occupy Wall Street. My goal in revisiting and utilizing Lefevre's framework emerges out of an intellectual and political concern towards better understanding and theorizing contestations over material spatial relationships.

Even though Lefebvre's work has gained acclaim amongst English speaking audiences, his writing, especially in *The Production of Space* is densely theoretical and occasionally difficult to decipher. Another difficulty of working with Lefebvre emerges from the frameworks he developed to study the social production of space. Lefebvre proposes a dialectic that consists of a conceptual triad - spatial practice, representations of space, and representational space. These three elements, which he also refers to as perceived, conceived, and lived, aim to given scholars a heuristic from which to work. Within his triad, Lefebvre cogently demonstrates that his framework works towards understanding how the body moves through and interacts within a spatial register. He writes,

> Considered overall, social practice presupposes the use of the body: the use of the hands, members and sensory organs, and the gestures of work as of activity unrelated to work. This is the realm of the perceived. As for representations of the body, they derive from accumulated scientific knowledge, disseminated with an admixture of ideology: from knowledge of anatomy, of physiology, of sickness and its cure, and of the body's relations with nature and with its surroundings or 'milieu'. Bodily lived experience, for

[21] David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution* (New York, NY: Verso, 2012), xii

its part, maybe both highly complex and quite peculiar, because 'culture' intervenes here, with its illusory immediacy.[22]

As his biographer, Andy Merrifield, points out of the triad, "he sketches this out in preliminary fashion… it's no mechanical framework or typology he's bequeathed but a dialectical simplification, fluid and alive, with three specific moments that blur into each other."[23]

Despite the preliminary analytic instruction provided with his triad – the bodily orientation reveals one potential strength in Lefebvre's work – understanding how symbolic meanings come to interact and be produced through interactions within space. This theoretical position, while perhaps veering towards a spatial determinism, simultaneously seeks to understand how the body might intervene in order to transform the dominant mode of spatial production. The case studies that follow in this dissertation are interested in understanding how the social production of space might help to envision and enact alternative material futures. The remainder of this section describes Lefebvre's conceptual triad, attuning to how these intersecting lenses provide a spatial correlate to work in STS regarding technological systems and infrastructures.

Lefebvre conceptualizes spatial practice, or perceived space, to describe shared social uses of space.

---

[22] Lefebvre, *The Production of Space*, 40.

[23] Andy Merrifield. 2006. *Henri Lefebvre: A Critical Introduction*. (New York, NY: Routledge), 109.

> Everyone knows what is meant when we speak of a 'room' in an apartment, the 'corner' of the street, a 'marketplace', a shopping or cultural 'centre', a public 'place', and so on. These terms of everyday discourse serve to distinguish, but not to isolate, particular spaces, and in general to describe a social space. They correspond to a specific use of that space, and hence to a spatial practice that they express and constitute.[25]

Spatial practice describes real, actually existing spaces, and the relations of production and reproduction that correspond to specific localities. Importantly, while spatial practice evokes where space is collectively experienced, this space is not static or determinant. A 'corner' or a 'market place' can be constituted by multiple spatial practices, supported by multiple modes of production. Yet, importantly, these practices must be shared and coalesce within this specific space.

Representations of space, or conceived space, is understood by Lefebvre as "tied to the relations of production and to the 'order' which those relations impose."[26] Importantly, Lefebvre understands these spaces as primarily inhabited by the work of "the space of scientists, planners, urbanists, technocratic subdividers and social engineers.", These professions "identify what is lived and what is perceived with what is conceived."[27] Although representations of space account for only one element of the conceptual triad, Lefebvre often critiques this modality for its tendency to both abstract and fragment the

---

[25] Ibid, 16.

[26] Ibid, 33.

[27] Ibid, 38.

space. Referred to by some as a reproach to abstraction, Lefebvre argues that the order imposed within conceived space tends towards homogeny and thus works to erase bodily difference of participants within space. Furthermore, the fragmentation of space through orderings such as zoning, parceling, or other techno-administrative practices of social-spatial enacts a political violence upon the body. Chapter five will discuss in further length this critique and its larger academic impact.

Finally, representational, or lived space is where "the imagination seeks to change and appropriate."[28] Representational space, although it consists of the associated meanings and symbols present in the lived and conceived realm, is where different meanings, uses, and practices emerge. The lived is where alternative modes of being are dreamt up. It is important to highlight that temporally, this space is experienced 'passively' as it overlays the present physical orderings of world at any given time. The potential for change emerges out of the orderings, material and epistemological, that pattern space at any historical moment. Representations of space align with Jasanoff's concept of sociotechnical imaginaries that she defines as "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology."[29] This conceptualization accounts for the circulation of politics and power into narratives of scientific and technological progress, a feature often flattened in the process

---

[28] Ibid, 39.

[29] Sheila Jasanoff. 'Future Imperfect: Science, Technology, and the Imaginations of Modernity.' *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (Chicago: University of Chicago Press, 2015), 4.

of doing work from an ANT perspective. [30] Yet, even with this future oriented modality this work does little to account for space. This lapse is not small. What must begin to take precedent in our studies of emergent materiality is their grounding within the physical, spatial environment

Thus, all three elements of the conceptual triad prove dynamic and relational. Thus, attention to space does not solely look at where a phenomenon takes place – it offers a lens through which to understand how space comes to constitute our material, bodily, and epistemological worlds. To imagine multiple desired futures requires both an understanding of an existing spatial environment and a collective vision of how to transform the space in question. For Jasanoff, "space and social order are coproduced"[33]. This relationship is eventually conceptualized as *extension* to describe the geopolitical spread of scientific and technological ideas across multiple geographies. The ability for imaginaries to travel, extend, and adapt to differing localities speaks to the explanatory goal of this concept. Sociotechnical imaginaries help to understand the spread of scientific and technical ideas within different social environments and social collectives. On the other hand, despite the invocation of coproduction, we do not see the same level of analysis being provided to spatial environments and spatial collectives. What might this level of analysis add to our larger disciplinary concerns with the global spread and local visions of science and technology? In later chapters of this dissertation, I examine different cases from the emergence of the US interstate highway system to bring a critical spatial lens into STS and Infrastructure studies. Yet, before we turn to these examples, it is necessary to take a brief

---

[30] Ibid, 18.

[33] Ibid, 22.

detour into political theory and questions of the public sphere to understand the emergence and origin of the concept of imaginaries, and more importantly the political significance of space within socio-technical life.

IV: The Public Sphere and Spaces of Cultural Circulation

Discussions of the public and private sphere within political and social theory conceptualize how people participate in, contribute to, and interact within domains of daily life. This work explores how different spheres shift relationships, forms of speech, the consumption of media forms. These conversations often implicitly invoke spatiality by designating a sphere of interaction. Work by Jurgen Habermas, Benedict Anderson, and Charles Taylor help to bridge discussions of the social and the spatial. Those steeped in the traditions of History of Technology may question why if such cross-disciplinary discussion is necessary. David E. Nye in *Electrifying America*, looks through the lens of publics to understand users of electrical systems.[34] In the chapter 'What Was Electricity?,' Nye traces through how distinct publics such as intellectuals, technical elites, businessmen, and the general public conceptualized electrification differently. This section draws from his use of publics as a methodological perspective to account for the heterogeneity of American life. Nye writes, "Americans did not always define themselves first in terms of class. Kinship, gender, religion, region, and ethnicity were all equally important as sources of identity, and in economic matters they often saw themselves as members not of classes but of particular interest groups."[35] Publics from this understanding more closely align with the relevant

[34]David E Nye. *Electrifying America: Social Meanings of a New Technology* (Cambridge, MA. MIT Press. 2001).

users of SCOT or Star and Griesemer's 'social worlds'. Instead, what demands further exploration is how the public and private sphere, and not isolated publics, help to conceptualize the relationship between spatiality and technological infrastructure.

In his *The Structural Transformation of the Public Sphere*, Jurgen Habermas examines how the public sphere originally manifested and changed over time. He argues that the emergence of a public sphere was foregrounded by developments in the domain of the private.[36] The home was no longer built solely for the family; instead developments in architecture took hold that opened up homes to a larger public. This fashioning of the self and the home was explicitly oriented towards an audience. Habermas understands this development as the privatization of life, a blurring between the public and private.

> The family room became a reception room in which private people gather to form a public… The line between public and private sphere extended right through the home. The privatized individuals stepped out of the intimacy of their living rooms into the public sphere of the salon, but the one was strictly complementary to the other.[37]

Habermas suggests thattwo distinct factors shaped the development of the private sphere; the accumulation of private property through consumption and the formation of personal subjectivity oriented towards a greater public. Chiefly, Habermas explores the forms of

---

[35] Ibid, 141.

[36] Jurgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* (Cambridge, MA: MIT Press. 1991), 45.

[37] Ibid, 45.

discourse that emerged in response to newly created spaces in the home or in daily life. Additionally, he argues that different built spaces facilitated and impacted emergent forms of social interaction. In Habermas's account, the constructed and material transformation of the environment becomes a generative component of communicative discourse and thus the social structure of interaction.

Habermas's work describes the historical emergence of the public and private spheres. Others, such as Charles Taylor, place this conception within a contemporary moment. In his book, *Modern Social Imaginaries,* he demonstrates how the premodern social order shaped the modern social imaginary, which in turn influenced, "three important forms of social self-understanding… the economy, the public sphere, and the practices and outlooks of democratic self-rule."[38] He differs from Habermas by drawing a distinction between common spaces and the public sphere. A common space is where those with particular, similar interests come together. Taylor writes of these spaces,

> Their focus is common, as against merely convergent, because it is part of what is commonly understood that they are attending to, the common object or purpose, together, as against each person just happening, on his or her own, to be concerned with the same thing.[39]

---

[38] Charles Taylor, *Modern Social Imaginaries* (Durham, NC: Duke University Press. 2004), 69.

[39] Ibid, 85.

The public sphere is fundamentally different from these arenas of commonality because it transcends a unified topical space.[40] The public sphere in this account becomes the domain that allows for matters of common interest to take hold across varying temporal and spatial geographies. Interestingly, Jasanoff and Kim's concept of *sociotechnical imaginaries* aims to serve as a corrective to Taylor's conceptualization. The authors share Taylor's desire to examine shared social meaning, but want to adequately account for the role of science and technology within these configurations. Speaking to Taylor's argument, Jasanoff remarks that his "imaginaries do not have a space for the material aspects of order."[41]

This observation proves only partially true. Taylor pays little explicit attention to the role of science and technology in crafting shared meaning. Yet, he looks to publics as a space where collective meanings come to coalesce through mediated goods and practices. Whereas Jasanoff argues that visions of technological development and planning are coproduced through social processes, Taylor understands the public sphere as constitutive of these forms of relationships. He writes, "so what the public sphere does is enable the society to come to a common mind, without the mediation of the political sphere, in a discourse of reason outside power, which nevertheless is normative for power."[42] At face value this understanding privileges an autonomous conception of social life where people come together and craft a rational subjectivity in relation to cultural objects and political discourses. Although he does not privilege the institutions of science and technology within

---

[40] Ibid, 86.

[41] Jasanoff, "Future Imperfect", 7.

[42] Taylor, *Modern Social Imaginaries*, 91.

this account, Taylor draws from a Habermasian understanding of a public sphere constituted by the circulation of mediated objects, commodities, and texts within specific spaces of interaction.

Thus, the public sphere and the spaces that it occupies are already infrastructural in that they rely on the networks, pathways, and connections made possible by technological development. Additionally, Benedict Anderson in his seminal work *Imagined Communities*, places a similar emphasis on infrastructural change as fundamental to imaginaries. He writes, "convergence of capitalism and print technology on the fatal diversity of human language created the possibility of a new form of imagined community, which in its basic morphology set the stage for the modern nation."[43] Even with his mention of technology, Anderson privileges language as the initiator of social change. Yet, print media and the language it spreads across nations are upheld by distinctly technical systems.

Michael Warner in *Publics and Counterpublics* understands publics as groups oriented outwards in the production of a shared discourse. He writes, "The projection of a public is a new, creative, and distinctively modern mode of power."[44] Warner's publics, much like Habermas's and Taylor's, rely on the circulation of shared discourses through communication mediums. A public constitutes itself through the connection between individual consumption of shared media and collective ways of understanding the world. Warner also develops the term counterpublic to consider how excluded bodies come to claim space, specifically in political life. "Counterpublics are spaces of circulation in which it

---

[43]Benedict Anderson, *Imagined Communities* (Brooklyn, NY: Verso. 2006), 48.

[44] Michael Warner, *Publics and Counterpublics* (Brooklyn, NY: Zone Books. 2002), 108.

is hoped that the poesis of scene making will be transformative, not replicative merely."[45] Counterpublics embrace a discourse of difference that emphasizes a way to see outside of dominant, universal claims. Actors within them can literally bring forth new ways of being, knowing, and understanding – allowing them to impose these claims into larger spaces. Unlike Taylor, Warner understands technology as productive of shared understandings of the world.[46] He argues that infrastructural changes, most recently with the Internet, shift established known temporal relationships of media that bridge the self and the community.

What I want to draw attention to here is how the enmeshed infrastructures of language, media, and technology must also be grounded within a physical spatial sphere. While Kim and Jasanoff's sociotechnical imaginaries are conceptualized as 'collectively held', there is no mention of their potential to be collectively experienced. Infrastructures mediate our bodily experience of the world. This experience is often tempered by spatial abstractions that shape, modulate, and regulate spatial environments. Conversations regarding the public and private sphere demonstrate that spaces, both from historical and contemporaneous perspective, have influenced the content and character of social life. This work provides a stepping stone towards moving work in STS to consider a more spatial analysis when understanding how technologies of infrastructure impact forms of social life. More so, I have argued here that work pertaining to publics and imaginaries do account for "material aspects of order" if perhaps more implicitly than Jasanoff would prefer.

---

[45] Ibid, 122.

[46] Ibid, 97-98.

V: Towards an Infrastructural Imaginary

This chapter has presented a review of literature covering early methodologies in STS, infrastructure studies, and the public sphere. I emphasized through this section that the field of STS as a whole has largely studied the social as dynamically intertwined within the emergence, implementation, and life of technological artifacts. This work has collapsed the question of spatiality into question of the social. Early work in STS worked against an impulse of technological determinism. It sought to demonstrate social malleability in the face of popular narratives regarding the determinist nature of large systems and technological objects. The emergence of infrastructure studies followed this impulse as well. Boundary objects helped to define how people create systems of knowledge and classification. Studying infrastructures became a mechanism of examining in relationship to technological systems. This relationship again resisted a determinist reading, instead social and technological life was understood to produce each other - to live in a constant rhythm. Yet, analyzing the early work in this field demonstrates a preference towards infrastructures of information, hoping to better understand how systems such as the internet would change how we produce and organize knowledge, in turn creating new infrastructures. This focus on information infrastructures left out a profound question - how do technological systems re/orient our relationships to our environment? Or, how do infrastructures transform spaces and geographies? One strand of thought that asked these questions in a more circuitous route is work concerning the public and private sphere. There, theorists understood spaces as profound shapers of communicative forms and discourses. While not explicitly concerned with technology, much of this work looks to

emergent systems, technical, communicative, or otherwise as helping to facilitate the new spaces.

Thus, uniting these two strands of thought, the first interested in understanding technological systems and embedded in social and cultural life and the second concerned with understanding how different spaces contribute to forms of discourse and expression, I suggest the analytic of the infrastructural imaginary. This term, as described in further detail in the following chapter, aims to expand upon Jasanoff and Kim's conceptualization to account for social understandings and uses of space within the planning imaginaries of technological systems.

Chapter Two – Norman Bel Geddes, Robert Moses, and Infrastructural Imaginaries

I: Two Competing Visions for Urban Highways

By 1939 Norman Bel Geddes had already made a name for himself as visionary theatrical and commercial designer. He was well known for innovative theater and set designs, wildly popular shop window displays, and a bestselling book, *Horizons*, which introduced the American public to the concept of streamlined design. Yet, as Christina Cogdell writes, "none of these successes topped the popular triumph of his Futurama exhibit for General Motors at the 1939 New York World's Fair, which catapulted him into the political arena as a consultant for the creation of the national interstate highway system."[1] 'Futurama' proved the most popular exhibit of the fair with a daily total of 30,000 visitors. The exhibit promised a complete transformation of the continental United States through the construction of infrastructure. Geddes's efforts sent the idea of a system of superhighways into the national imagination.

Yet, Geddes's transformative vision was not without its detractors. A 1940 editorial in The New York Times begins with a single word quote from New York City Parks Commissioner, Robert Moses, declaring 'Futurama' "Bunk." Moses was himself a master planner of roads and bridges. By the time of the 1939 World's Fair, he had already had a hand in the building of multiple parkways in Long Island – as well as countless other parks, bridges, and urban amenities. His imprimatur is still felt within both New York City and the larger Empire state to this day. Moses developed highways as a way to solve the problems

[1] Christina Cogdell, "The Futurama Recontextualized: Norman Bel Geddes's Eugenic 'World of Tomorrow.'" *American Quarterly* 52, no. 2 (2000): 193-194.

of congestion, blight, and disinvestment in cities and urban areas, a sharp contrast to the utopic visions of Geddes. Elsewhere, Moses describes 'Futurama' as "interesting and stimulating, but hardly scientific."[2]

Geddes, taking issue with the critique levied by Moses calls the public refutations of his superhighway "short-sighted" and unable to account for the rapid technological change wrought by the automobile. He argues that planners like Moses think within the present moment and refuse to build roads that move towards innovations in the not so distant future. For good measure, Geddes also takes the opportunity to jab back; "I think no one excels him in resettling bushes in a park and finding play spaces for the underprivileged voter. But landscaping along a highway does not make it safe for present-day travel."[3] The historical record demonstrates that Moses proved far more adept in building roads and mobilizing engineers, urban planners, and city governments than Geddes. Moses is credited with building over 400 miles of parkways; Geddes on the other hand built zero. Yet, the publically exchanged barbs between two high profile men points to an important rift in early imaginaries of interstate highway building in the United States.

The dawn of Second World War came just as the 1939 World's Fair closed its inaugural season. Following the entry of the United States into the war in December of 1941, the optimism that enveloped 'Futurama' was replaced with more pressing wartime concerns. Financing a superhighway, let alone building one, became a federal impossibility. As Historians Mark Rose and Raymond Mohl write, "Not again until September 6, 1945,

---

[2] "Moses Envisages Future Highways." New York Times (1923-Current file), Page 11 (21 January 1940). ProQuest Historical Newspapers.

[3] "Fair's Theme Song Has Its Premiere." New York Times (1923-Current file), Page 13. (3 February 1940). ProQuest Historical Newspapers.

when President Harry S. Truman dropped war-time controls, did normal state and federal road construction get under way."[4] Yet, the lack of federal funds did not dissuade some US cities from beginning to develop plans for urban routes as a way to accommodate rising automobile traffic and confront urban blight and disinvestment.

During this period, Robert Moses was commissioned to do a route study and proposal for the city of Baltimore in 1944. The report describes a plan for highway building in Baltimore that would simultaneously reduce traffic congestion while also clearing out blighted urban areas. Moses, advocated for arterial routes - roads that traveled directly into the city center. Building arterial highways would serve those who worked in the city center, but had recently fled to the burgeoning suburbs. Like Geddes, Moses was fundamentally interested in overseeing the scope, direction, and shape of highways of the future. Looking at the urban highways today, the wide proliferation of beltways and arterial routes seem to suggest that Moses emerged as the more successful of the two planners.

Yet, 'Futurama' deserves reexamination for how it popularized the highway, sought to redefine spaces and geographies, and imagined a systemic technology into the future. The legacy of Geddes's exhibit might not be material, but instead provides a window into what might have been. More significantly, Geddes's displacement of social values into infrastructural environments configures highways as indicative of a coming technological modernity. Despite Moses's claim to a more scientific or legitimate form of road building, he also imbued his plans with a veneer of environmental transformation. Both Geddes and Moses were interested in using highways as a driver and determinant of social change. The

---

[4] Mark H Rose and Raymond Mohl *Interstate: Highway Politics and Policy Since 1939*. Third (Knoxville: University of Tennessee Press, 2012), 13.

two were not the only planners engaged in these issues, the Olmsted Brother's for instance, issued similar studies that imagined grand systems of parkland and accompanying parkways. Additionally, a variety of actors at the local, state, and federal level sought to build highways as a way to drive economic growth.[5] Yet, examining and contrasting the plans put forth by Moses and Geddes, offers a small window into the ways these planners' evoked social understandings of space in an attempt to justify their priorities during early national efforts towards highway building.

In the previous chapter, I introduced Jasanoff and Kim's concept of sociotechnical imaginaries as a recent framework within STS to describe "collectively held, institutionally stabilized, and publicly performed futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology."[6] I raised two interrelated critiques of this concept. Firstly, in privileging the social within this framework, questions of spatiality and spatial transformation fall to the background in accounts of technological futures. Secondly, I argued that in prioritizing science and technology as the shapers of imaginaries, this concept does not fully account for how infrastructural forms, be they communication networks, road systems, or otherwise, blur the categories of science and technology themselves. While science and technology do stand as formative shapers in social, spatial, and political registers of infrastructural system, it is also important to account for how the proposal or construction of enmeshed systems seek to transform lived material and geographic arrangements to better understand their broader impacts and temporal resonances. In expanding the

---

[5] Ibid, xxii.

[6] Sheila Jasanoff, "Future Imperfect", 4.

concept of sociotechnical imaginaries to infrastructural imaginaries I specifically address how proposed futures make use of spatial registers and in turn how responses to these proposals circulate and travel socially.

Studying the competing visions for the future highways proposed by Geddes and Moses helps to explicate this spatial correlate. By contrasting these planning regimes, two competing visions for a life transformed through infrastructure emerge. The analysis in this chapter is done in the spirit of Suzanne Moon's observation that "studying sociotechnical imaginaries may therefore help us to properly read certain forms of civil action and to consider the material ways that civil society actors carry a message of reform through society."[7] Chapter three and four discuss in further detail the interplay between infrastructural imaginaries and civic action.

I begin the following section by describing the experience of 'Futurama' exhibit. This exhibit presented many in the US, as well as visitors from abroad, with their first glance of an interstate highway system. This discussion provides a sense of the cultural significance of this event, while also foregrounding the planning suggestions for highways that emerged from the fair's display of emergent technology through entertaining displays. With this exhibit Geddes, suggested that technological innovation in motorway construction, planning, and design, would transform and ultimately control the social and physical landscape of the US. He later followed up 'Futurama' with a companion book titled *Magic Motorways* where he presented a plan aimed to realize his monumental vision. Both exhibit and book put forth a clear argument for a determined and technologically managed social

[7] Suzanne Moon, "Building from the Outside In: Sociotechnical Imaginaries and Civil Society in New Order Indonesia," in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power,* ed. Sheila Jasanoff and Sang-Hyun Kim (Chicago: University of Chicago Press, 2015), 174.

and spatial change. Although this plan proved ultimately unrealized, both exhibit and book present a telling story of the origins of many popular expectations of highway travel and transport. Following this, I contrast 'Futurama' with the Robert Moses's *Baltimore Arterial Report.* This document articulates a plan for an arterial highway in the city of Baltimore that, if built, would displace thousands of residents and reduce the tax base for the city. While Geddes and Moses visions differ in their technocratic and determinant specifies, each put forth an imaginary of future space that ordered landscapes to achieve certain ends. To enact the highways of 'Futurama' or the *Baltimore Arterial Report* suggested a radical rupture of geographic space, where disparate roads required remaking, reimagining, or building from scratch. This chapter works to understand how these infrastructural imaginaries aimed to transform spatial environments, and in turn, how this physical organization of space was imagined to shape social relationships

II: 'Futurama' and the Making of an Infrastructural Imaginary

The 1939 World's Fair took place at the Flushing Meadows-Corona Park in New York City and operated for two seasons. Robert Moses, New York City Parks Commissioner at the time, was responsible for turning the former garbage dump into the parkland for the site. The fair officially opened on April 30, 1939 and closed October 27, 1940. Over this span of time, the fair welcomed nearly 45 million visitors from around the world, many traveling by train to Flushing, Queens to reach the fairgrounds. The exhibits, amusement zones, and pavilions all related to the fair slogan - "Dawn of a New Day." The future, just on the horizon and shaped by rapidly emerging technologies, systems, and global communication, unfolded before the eyes of attendees. As a brochure for the event read:

> The eyes of the Fair are on the future - not in the sense of peering toward the unknown nor attempting to foretell the events of tomorrow and the shape of things to come, but in the sense of presenting a new and clearer view of today in preparation for tomorrow; a view of the forces and ideas that prevail as well as the machines.[8]

By this telling, the 1939 World's Fair offered its visitors not only the chance to peer into the possibilities of the future, it transported them out of their present tense to experience a world profoundly shaped and improved by expanded technological innovation.

The fair presented an immersive imaginary - offering glimpses and examples of a world just around the corner. The star attraction of the fair, and the exhibit perhaps most exemplarily of this ethos, was the General Motor's sponsored pavilion, 'Highways and Horizons'. This exhibit contained Norman Bel Geddes's 'Futurama' where attendees saw the first glances of how highways and automobiles would transform the future of mobility, travel, commerce, and, more broadly, modern life itself. Much like the broader theme of the fair, 'Futurama' understood highway systems as a profoundly determinant driver of social and economic life. This technological determinism defined the promotional materials produced by General Motors in support of the exhibit. A video released by the company in 1940 begins with images of waves falling on an empty shore followed by a horse-led covered wagon plodding through a rural prairie. The reason for the juxtaposition of

---

[8] "The Curious Connection between 1939 World's Fair in NYC and the Port-au-Prince's Bicentennial in Haiti." Queens Museum. Accessed July 03, 2018.

environments, as a male narrator describes, demonstrates to viewers that human progress is made through an innate desire to explore new places, and seek "new horizons." This primal drive, coupled with recent advances in technology, forces modern man (and it is certainly a man doing this labor) to seek out new paths, roads, and connections. As the narrator describes;

> And with the demand for all of these conveniences and improvements, opportunities for the employment for men, money, and materials have increased. And thus the highways of social and commercial developments are widening without end or limit except the imagination and vision of men who do new things. [9]

Obviously, this video serves as a marketing device aimed at publicizing the exhibit, and with it broadening a social recognition for all General Motors products. But, it does, in clear language, demonstrate the ideological impulse that guided early highway projects and the language of a corporate imaginary prior to the Federal-Aid Highway Act of 1956. Highways, by the telling of General Motors, are not merely technical systems that easily facilitate the movement of goods, services, and people over space. These technologies also transform family life, social relationships, and the way people are able to move from place to place. To enact highways, from the perspective of General Motors, also means to embrace a wider project of social and geographic transformation.

---

[9] "To New Horizons," The Internet Archive, 1940, Accessed 1 May 2018, video, https://archive.org/details/ToNewHor1940.

Attendees to *'Futurama'* often waited for hours just to experience the world created by Norman Bel Geddes. They lined up within the swirling queue outside of the General Motors pavilion before even entering the building. As they waited, visitors slowly ascended the sloped entrance before being enveloped by a towering entrance painted ""vermilion red" and "spotlit along its entire length with concealed fluorescent lights"."[10] Upon entering the building participants wove through another waiting area where riders gazed up upon a towering cartographic rendering of the new world they were about to enter. As Roland Marchand writes,"Bel Geddes… designed this room with diverging walls and an immense, 60-by-100-foot map that curved back high over the spectator."[11] The 'Futurama' exhibit pressured its audience to contend with scale and enormity from the moment they entered the queue, moving from passenger, to observer, and eventually participant.

After attendees of the exhibit finally entered the building and moved through the lobby, they boarded omni-moving vehicles that overlooked Geddes's display. An electronic speaker in the ride vehicle narrated the scene that unfolded before their eyes. The sheer scope and detail of the diorama awed viewers. It covered "more than 35,000 square feet and contains 500,000 individually designed houses and buildings, over 1,000,000 trees and shrubs of eighteen species and 50,000 scale model vehicles."[12] Additionally, while the exhibit was modeled after existing layouts in cities like "St. Louis, Council Bluffs, Reading, New Bedford, [and] Concord," the spaces that audiences viewed still remained imagined

---

[10] Cogdell, "The Futurama Recontextualized," 226.

[11] Roland Marchand, "The Designers go to the Fair II: Norman Bel Geddes, The General Motors "Futurama" and the Visit to the Factory Transformed." *Design Issues* no. 2 (1992): 31.

[12] Highways and Horizons Exhibit Brochure, Personal Collection.

projections of a future space.[13] This blending of the real and actually existing, with the fictitious registers of a novel spatial imaginary gave the model environment a veneer of plausibility and solidified Geddes perceived technical expertise. As the designer, he was both oracle and expert, guiding the fair going masses through a future world just on the horizon.

The perspective from which riders viewed this display also helped to reinforce Geddes's vision. The ride vehicle began with passengers seated above the diorama, offering a birds eye view of a concatenated national landscape. This ride offered a vista previously inconceivable; it allowed viewers to see the total system. Cities, which held commerce and business, were connected to suburban housing areas. Rural landscapes provided goods and materials to the more densely populated areas. These new highways were massive, some stretched over 12 lanes, and others reached vertically into the sky. The huge structures accommodated all forms of traffic; local, express, or distance. The homogeneity of the road would connect these diverse social and spatial differences into a streamlined and efficient mode of transportation.[14] As the ride progressed, the models below grew larger. This change in perspective transported the riders from mere elevated observer, into that of an embedded participant into this future environment. As the ride concluded the passengers found themselves in environment they had just gazed down upon just moments before.

---

[13] Bel Geddes, *Magic Motorways*, 9.

> Suddenly the spectator, in his chair, is swung about! He can scarcely believe his eyes. He is confronted with the full-sized street intersection he was just looking down on. He gets out of his chair and becomes part of the crowd.[15]

This transition, or as many called it, the climax,[16] from spectator to participant dazzled, simultaneously transitioning the space from that of the future to that of the present. Upon exiting, participants received a pin they could proudly wear that read, "I Have Seen the Future."

Those who study highways often hold up 'Futurama' as the precipitating experience that primed American culture for the massive road building projects to come in the 1950's, 60's and 70's. Rose and Mohl reference the exhibit throughout their book *Interstate: Highway Politics and Policy Since 1939* as the moment when highway building became a desired project for politicians, planners, and citizens alike. They write, "who could deny 'Futurama's' obvious appeal, especially for Americans who had endured ten years of depression, lost savings, and savaged careers. Soon after 'Futurama' opened, President Franklin D. Roosevelt became an early Interstate booster."[17] Roosevelt invited Geddes to the White House for a dinner where "the west hall was set aside… for a model of Geddes's exhibit, and guests discussed creation of a Federal Land Authority empowered to take extra

---

[15] Marchand, "Designers go the Fair", 34.

[16] Cogdell, "Futurama Recontextualized", 227.

[17] Rose and Mohl *Interstate: Highway Politics*, ix-x, 1-2.

wide rights-of-way."[18] This ride catapulted the idea of large, interconnected highways into both public and policy suggestions for a transformed United States.

Even to this day, books and articles continue to be written about 1939 World's Fair and its political, cultural, and historical legacies. Yet, despite this popular and intellectual interest, the present moment proves that the technologically deterministic promises of 'Futurama', the imaginaries it predicted still, to this day, remain on the horizon. Geddes promised self-driving cars and travel lanes where vehicles could glide comfortably at 100mph. Yet, despite the unrealized promises of 'Futurama', looking at the ride in retrospect demonstrates how the novelty of a highway system was framed as beneficial not only for its technological potentiality, but also for its ability to transform people, geographies, and modern life itself.

As 'Futurama' displayed a wholly modified landscape it actively aimed to immerse its viewers into the landscape. Riders not only saw the future, they lived it, if only for a fleeting moment. In riding through and witnessing the exhibit, future space became experiential, reinforcing the imaginary proposed by Geddes. While riding on 'Futurama', attendees slowly became a part of the landscape. This powerful transition in perspective made this possible future materially tangible. Jasanoff writes of imaginaries that "by inquiring into imagination as a social practice, we follow the embedding of ideas into cultures, institutions, and materialities, whereby the merely imagined is converted into the solidity of identities and the durability of routines and things."[20] While 'Futurama' can

---

[18] Ibid, 11.

[20] Sheila Jasanoff, "Imagined and Invented Worlds," in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power,* ed. Sheila Jasanoff and Sang-Hyun Kim (Chicago: University of Chicago Press, 2015), 322.

certainly be understood as an exercise in social practice, to exclude how this imaginary also evoked spatial practice - that is the intentional manipulation of the physical environment and perspective of the viewer to enact the imagined - ignores where the embedding of ideas takes place. Attention to this spatial component does not vacate the social, rather the two practices complement each other. This relationship is further explored in the next section where I analyze Geddes's attempts to embed forms of social practice into his imagined space.

III: Social Desires of *Magic Motorways*

Described in the New York Times as "by far the most popular exhibit at the World's Fair," the allure of 'Futurama' expanded even after it closed its doors to fair goers.[21] Following the popular success of 'Futurama', Geddes published a companion book titled *Magic Motorways*. In this text he espouses his design principles and develops a plan for the building of a comprehensive road system for the American people. Geddes describes the process of human transportation and the subsequent creation of paths to accommodate this movement as guided by four desires. He writes,

> From the beginning of time, whenever people tried to get from one place to another, they have kept these same basic aims in mind. The first is the desire for self-preservation; the second is their desire for a pleasant trip; the third is

---

[21] Waldemer Kaempffert, "Seeing the World of Tomorrow From a Chair Train," New York Times (1923-Current file), Page 77. (10 September 1939). ProQuest Historical Newspapers.

> their desire to reach their goal quickly; and the fourth is their desire to spend as little money and effort on the way as possible.[22]

He translates these human desires into four design goals for highway building; safety, comfort, speed, and economy. Thus, the design principles emphasized in his account find their grounding in Geddes's assumed social priorities for drivers and his self-proclaimed best mechanisms for translating these goals into highway infrastructure. Throughout the pages of *Magic Motorways*, Geddes repeatedly describes how to build systems that embed within their designs his four principles. Each value constrained not only the physical specifications of this new road system, but also the geographies it would utilize, the people it would benefit, and the problems it would solve.

These design values coalesce most clearly in Geddes proposal to remake the landscape and social environment of American cities. To fully understand Geddes's intervention into urban planning, we must turn briefly to the two prominent strains of thought toward highway planning in the early 1940's. Cities at this moment were facing growing congestion from the rising popularity of automobiles. Following the depression and a general lack of economic investment, roads were in poor condition and unable to efficiently handle the increased use of personal automobiles. This led to early attempts by politicians, engineers, and urban planners to propose interventions to solve these problems. As Rose and Mohl write, "In 1944, Roads Commissioner MacDonald and his colleagues published a plan for construction of a national expressway network aimed at

[22] Bel Geddes, *Magic Motorways*, 16.

relieving traffic, creating jobs, and serving as a framework for urban redevelopment."[23] Urban road grids had not planned for this deluge of traffic. Policy makers generally proposed two solutions towards solving this problem. The first solution suggested building arterial routes, or highways that cut through cities serving as an artery for a large volume of vehicles. These routes aimed to efficiently route traffic to centralized business districts, many of which were struggling as urban residents relocated to the suburbs.[24] The second form of proposed roads were bypass routes. These roads directed traffic around a city to aid commercial transport and trans-regional transportation. Both of these solutions assumed that the city of the future would remain a hybrid residential-commercial space,

Geddes on the other hand envisioned cities as a "working" entity.[25] Commuters of the future would travel into the city to work, but reside outside of it. This shift in land-use meant that highways did not have to enter the city, instead these structures would sit on the periphery. Planners in turn could develop feeder routes that delivered commuters efficiently. For instance;

> Here commuters may park their cars and take subways into the business section, or they may transfer from their large high-powered rural cars and drive on in their small urban cars. Here long-distance busses transfer their passengers to small local buses. Large trucks, too, go no farther into the city

---

[23] Rose and Mohl. *Interstate: Highway Politics,* 16.

[24] Greater discussion of this trend follows in the next section as well as in Chapter 4.

[25] Bel Geddes, *Magic Motorways*, 209.

> than this. They haul up at loading platforms and put their products aboard city trucks or on pneumatic delivery tubes.[26]

Within this system, the shape and design of the road determines the social relationships that take place within it. The primary technique Geddes poses to accomplish this is through transitioning land use from mixed use to strictly commercial. This account, which emphasizes the determinacy of structure over both social and geographic influence, is completely devoid of questions of use that could challenge the discrete parceling of land prescribed by Geddes. He gives little credence to social practice within his imagined infrastructural landscape. While this was certainly Geddes's goal, the absence of consideration of who would interact with this new city space or even how these people might feel about this new city demonstrates how strongly he believed roads could be a technology of control.

Indeed, Geddes often argues throughout *Magic Motorways* that the 'human factor' stands in the way of achieving many of his desired design principles. He advocates for a strong technological determinism where in technologies control user behavior. Geddes, in turn, suggested eliminating the 'human factor' in driving.

> Drivers have not rid themselves of impulses which have been part of them from time immemorial. True, training by continual automobile driving is perhaps quickening the reaction time of man as a species, but these reactions

[26] Ibid, 219.

> cannot be depended upon. Man is not a machine and he cannot be geared to function automatically as part of any machine.[27]

He proposes a technical solution in response, arguing that other existing mechanical systems have been fairly successful in removing elements that rely on human decision-making, reaction time, and reliability. The cars and highways of the future would contain automatic controls that prevent driver error, accidents, and mechanical breakdown. More so, engineers and not policy or lawmakers would create road systems. The law, by Geddes reading, was too piecemeal, too human a tool, to fully regulate to the extent that the modern automobile and highway necessitated. A system of technocratic and corporate governance of these systems ensured the complete control and surveillance Geddes believed necessary to ensure the safety of motorists.[28]

He also proposed automatic control as a mechanism to regulate speed within designated lanes of travel. These separated lanes ordered traffic based on type of travel (local, regional, intraregional) and speed of the vehicle, while also ensuring that cars maintained safe following distance between other automobiles.[29] Yet, even as he promised a driving experience where the operator was rid of his responsibilities, the system was not entirely without human control. Geddes proposed that these highways fall under the heavy surveillance of watchtowers located along every five miles along a highway. These human controls directed traffic in the event of mechanical error or breakdown.

---

[27] Ibid, 52.

[28] Ibid, 56.

[29] Ibid, 75-76.

> A slowing down or stopped car automatically notifies the two nearest traffic control towers… Cars behind the stopped car would be turned off into other lanes of traffic if adjacent lane were not at capacity. An emergent car from the control tower would immediately speed down the new open lane and remove your car from traffic.[30]

Notably absent from this account is the fallibility of the humans who need to operate these systems. The same level of critique applied in support of eliminating the human factor in driving is not applied to the same human factors now assisting and directing traffic. While Geddes finds inspiration in these systems from shipping and airplane control towers, he neglects to consider the massive training required to staff the hundreds of thousands of traffic experts now needed to watch over and ensure the safety of the system.

The social and spatial imaginaries put forth in *Magic Motorways* make clear that Geddes expected highways to determine the behavior, activities, and trajectories of the users. The goal in building this new system of roads was to construct highways that could allow cars to achieve their highest technical capacity in order to facilitate the 'innate' desires of human transportation that Geddes isolates. Looking at *Magic Motorways* in concert with 'Futurama' demonstrates how Geddes's projection of future social life was constrained and influenced by his commitment to the spatial practices put forth within the exhibit. 'Futurama' powerfully appropriates geography and space as a tool towards naturalizing technological change and with it the social practices of those who use the

---

[30] Ibid, 81-82.

system. The infrastructural imaginaries of Norman Bel Geddes might best be described as an attempt to control space and social life through technological intervention. As we will see in the next section, the work of Robert Moses, contrasts this vision. Moses was also concerned with developing a controlled system, but this control emerges not from the technologies themselves, but through top down, prudent, and technocratic governance.

IV: Arterial Roads and Urban Control

In October of 1944, Moses and engineer W. Earl Andrews released a commissioned report to the Mayor of Baltimore titled the *Baltimore Arterial Report*. The consultants who worked on this project were handpicked by Robert Moses, all of them from various departments across New York State. The Harbor Crossing-Freeway Committee commissioned the pair and to provide recommendations towards solving the problem of traffic congestion in downtown Baltimore. Within Baltimore at the time a "bitter controversy" emerged between those who supported the construction of a harbor bridge and others who proposed building a freeway. To quell the controversy the Mayor assembled the committee whose members came from both sides of the argument, as well as "independent members" who did not have a preference of road type.[31] As described by committee member Herbert Brune, "The Committee was requested, first, to name engineering experts whose recommendations from a traffic and engineering stand point and whose estimates of costs would be impartial and authoritative."[32] The geographic

[31] Herbert M. Brune, "Analysis of Freeway Proposal" 11 Oct. 1941; Movement Against Destruction Records; Series VII, Box 7A, Folder 1; University of Baltimore Special Collections and Archives. 1.

[32] Ibid, 1.

distance of Moses and his team led to their appearance as outside, and thus impartial, experts who could objectively report on the best routing option for Baltimore City.

At the time of the report's release, Moses had made a name for himself as a tenacious and powerful planner of parks and highways within New York City. As Langdon Winner writes of Moses "his monumental structures of concrete and steel embody a systemic system of inequality, a way of engineering relationships among people that, after time becomes just another part of the landscape."[33] His clout followed him nationally as he was asked to consult on projects in other cities, including Baltimore. The report describes a plan for highway building in Baltimore that addresses the growing problem of traffic congestion faced by the city. Moses, in the introduction of the document states that the only option for Baltimore is an arterial route to bring drivers directly to the city center. He writes,

> Baltimore might have called in some of our more glittering theoretical planners, in which case this city would have been told how urbanism must be discarded and urged not to waste money on central arteries when the higher strategy calls for the abandonment of most of the town.[34]

While the previously discussed plan by Geddes does not totally do away with the city, Moses's reference here to 'theoretical planners' is certainly meant to stand as a refutation

---

[33] Langdon Winner, "Do Artifacts have Politics?," *Daedalus* 109, no. 1 (Winter 1980), 129.

[34] Robert Moses, "Baltimore Arterial Report," SASB M2 - Milstein Division - Room 121 – New York Public Library (9 October 1944), 5.

to highway planning proposals that do not enter the city. He furthers his point by arguing that arterial roads are the preferred routes of all legitimate planners, "it is, in fact, a cardinal rule for all but the Ivory Tower-remote control-planners who preach that large cities should be completely decentralized or done away with entirely."[35] This positioning and gatekeeping of the "practical" or legitimate perspective of highway planning, allows Moses to position himself in the document as a rational expert, concerned with developing the most pragmatic and logical system.

This pragmatism separates him from the utopic impulses of Geddes. Rather than attempting to predict future technological advances, Moses uses numerical data to provide projections into the challenges Baltimore faces in the future. The report draws from 1938 traffic data collected from the Police Department as well as the Maryland State Roads Commission.[36] In the time since this data was complied, traffic patterns within Baltimore had changed to accommodate war production initiatives and "war restrictions on pleasure driving."[37] Therefore the report writers feel that the historical, prewar data, is best representative of the normal state of traffic patterns within the city.[38] From this baseline, the report suggests that once the war concludes, urban usage of trolley and bus systems will decline, leading to a 35% increase in automotive use. Overall, the report reinforces a 'status quo' for Baltimore. Little will change over time except the overall usage of cars. The

---

[35] Ibid, 6.

[36] Ibid, 14.

[37] Ibid, 15.

[38] Ibid, 14.

writers predict that the destination of drivers will remain the same (the center city),[39] that rapid transit will not be feasible,[40] and that no natural features of the urban area are readily transformable into roadways.[41] "At best, Baltimore is in for a considerable period of traffic discomfort, because producers of passenger cars, gasoline, oil and tires will turn out their products faster than road builders can open new arteries required to meet the challenge."[42] With these constraints amidst the constant march of progress, the report finds an arterial route, an east-west expressway, proves the only feasible solution to the problem of congestion.

Yet, this route also imparts massive financial and human costs. The writers estimate that this expressway, which will cost the city 40 million dollars, would displace over 19,000 people. For Moses, these costs are small considering the potential reward. More so, since many of the houses are in slum areas, the city will actually benefit from their removal. He writes;

> Some of the slum areas through which the Franklin Expressway passes are a disgrace to the community and the more of them that are wiped out, the healthier Baltimore will be in the long run. Merely as a matter of local pride, if there were no other and more practical considerations, business leaders as well as citizens sensitive about the appearance and reputation of their city

---

[39] Ibid, 19.

[40] Ibid, 15.

[41] Ibid, 13.

[42] Ibid, 10.

> should be unwilling longer to tolerate this close juxtaposition of civic center and slum. Nothing which we propose to remove will constitute any loss to Baltimore.[43]

The removal of slums serves only as a slightly veiled project of discrimination through different means. Many, although not all, of the areas placed under condemnation lines in this plan are poor, black communities. The brief history of Baltimore provided by the authors mirror this focus. By their telling, Baltimore was a "solidly built" trading city whose rise in population slowly gave way to boarding houses, tenements, and eventually slums occupied by black communities.[44] The slum in this rendering does not merely reference the deterioration of buildings; it evokes a larger fracturing of a homogenized white urban landscape. An arterial route reverses this damage by physically providing facilitated pathways to which white travelers, now forced to the outskirts of the city, could better access its commercial and business center. Even at the time the time of the report, committee members seemed aware that the displacement of over 19,000 residents would present a large burden on the city – both in terms of a housing shortage and a significantly diminished property tax base.[45]

Rhetorically, Moses positioned the geographic slums as the natural and logical choice for road placement. By combining the historical traffic data with use projections, he

---

[43] Ibid, 9.

[44] Ibid, 13.

[45] Herbert Brune, "Analysis of Freeway Proposal", 5, 10.

demonstrates how the most efficient and practical decision is to place the route in the north-west section. He writes,

> If this proposed expressway were to be constructed in the heart of the business district, property damage would be prohibitive… If located on the northern side of the business district, the east-west expressway would become a distributor for about two-thirds of traffic entering the city and by proper connection with U.S. Route #1, it would also serve the southwest sector.

Notice how this account provides no economic cost to the highway positioned to the north. Its geographic convenience is taken as a natural consequence of physical location. This decision of placement becomes a mere coincidence rather than a deliberate tactic towards removal. "The Franklin Expressway construction will actually clean out a large number of dwellings that are unfit for use and many others that are substandard. It will, of course, require the elimination of some good buildings, but this is inevitable."[46] More so, this expressway would replace this land not only with a highway, but with neighboring parkland, recreation areas, and pedestrian rights-of-ways as well.[47]

Geddes too saw the slum removal as a part of urban planning for the future. In his futuristic vision of the city of 1960 discussed in *Magic Motorways*, he writes, "it was tough enough to just to clear out the worst streets there. By opening up the sections surrounding

[46] Ibid, 32.

[47] Ibid, 28-29.

the center, by reclaiming them from misuse and blight, people were drawn out, distributing more evenly population and traffic."[48] Yet, the impulse behind this clearance differs in motive. Geddes did not envision cities as living or residential spaces, the redistribution of the population whether through road building or as a consequence of the new order of life was a technological inevitability. By utilizing highways as a mechanism, or driver, of slum removal, Moses sought a specific social effect of through targeted spatial implementation of infrastructure. This effect meant that through clearing out undesirable and blighted areas, the city would have access to new right-of-ways that change the physical, spatial, and social characteristics of urban life. The city would still be livable, but only for certain populations. Yet, rather than this being an inevitability of technological progress, it was an outcome of targeted municipal governance where by the city car is made "our servant."[49]

As we will see in the next chapter, this report would have wide spread consequences on the city of Baltimore and the residents whose homes and businesses were threatened by the looming development of an expressway. These plans would eventually spark protest and community organization against the 'road gang' who cared only about facts and figures and not about the displacement of thousands. Moses, used to public challenges, foresaw these conflicts. He writes,

> We know that there has been some talk about a canal or inverted Chinese wall dividing the City and its people. This is an old chestnut to most of us. It has been used against every parkway and express artery since the internal

[48] Bel Geddes, *Magic Motorways*, 213.

[49] Moses, "Baltimore Arterial Report", 6.

> combustion engine was perfected and manufacturers began assembly line multiplication of cars. Most of the critics in progressive communities have lived to retract their epithets. Some are beyond conversion, but these are the same people who don't believe in automobiles, live in the past, and honestly believe they have no debt to the future. It ought to be possible for Baltimore to meet the demand of tomorrow without waiting for another disastrous fire like that of 1904.[50]

This sentiment encapsulates the infrastructural planning imaginary Moses put forth. Technologies, such as roads in this instance, are necessary tools of governance that allow a space to meet the new and emerging needs to the future. These technologies do not drive themselves however, they must be thoughtfully planned by those with expertise and training to do so. To disagree with this expertise would be foolish as it hinders the city and relies on external events to spark innovative change. More so, to challenge these recommendations, or conflate road placement with overt discrimination detracts from the apparent impartiality and authority of the engineers and planners themselves.

V: Competing Infrastructural Imaginaries

This chapter analyzed two early proposals for the future of highway building in the United States, one presented a national vision, the other localized within Baltimore City. I began by foregrounding this competition within the larger influence of 'Futurama', its images of progress, and its portrayal of technological transformation. This ride marked the

[50] Ibid, 7-8.

first time in the history of the US that a cohesive plan emerged for connecting previously disparate road systems to one another. Geddes's plan for highways was one of total technological determination where roads would shape social, cultural, and economic relationships. He presented this world as a utopic one, where the efficacy and streamlined nature of 'superhighways' would improve life for all. Yet despite these proclamations of overall human benefit, Geddes rarely considered the individual, the citizen, or the business owner. Despite his goal for universal spatial transformation and the elimination of the 'human factor,' his work from both 'Futurama' and *Magic Motorways* fails to engage with the humans whose labor he plans to delegate to machines. He provides no map or plan to deliver the ride 'climax' to the real world where roads must contend with humans and all of their inefficiencies. Simply, it was unclear, even when Geddes was writing, what the world of tomorrow would look like when actually populated. This negation was not only a product of his deterministic view; it also emerged from the ways that Geddes embedded social relationships with the spatial built environment. The primary determinism of the 'superhighway' was its grand appropriation of geography to meet the growing rate of technological progress. From this viewpoint social relationships become naturalized into the use of the environment, creating a relationship between technology and spatial conquest.

Moses on the other hand factored human relationships and social experience centrally into his plans for an east-west expressway in Baltimore. Yet, in his case he privileged the social experience and relationships of one group (white, middle class, suburbanites), to that of another (black, poor, urban). Moses envisioned a city where access and livability was determined through infrastructural implementation and construction.

Yet, even in this account where there is explicit consideration of the 'social environment' a powerful ideology of spatiality also emerges. By building highways to serve certain populations, Moses envisioned a way to remake the city space so that it would be rationally governable by infrastructural systems. He assembled a team of experts, historical traffic data, and other planning jargon to make otherwise subjective decisions, such as route selection, appear objective. This language abstracted the urban environment to quantifiable economic qualities, such as land value, property value, and the more speculative, improvement value. This transition from representational space to spatial practice evokes an early version of what David Harvey would come to classify as the "insidious and cancerous process of transformation occurred through fiscal disciplining of democratic urban governments, land markets, property speculation, and the sorting of land to those uses that generated the highest possible financial rate of return under the land's "highest and best use."[51]

Despite the differences between Geddes and Moses, both sought to transform geographic space. To do so the planners embedded distinct social practices and priorities into their proposed landscapes. This embedding points to a defining characteristic of infrastructural imaginaries – that is the appropriation of geographic space through systemic intervention to rearrange social space itself. Although Geddes's system aimed to meet the needs of a nation of users, he relied on the homogenization of social experience; enacted through his four design principles, to shape the trajectory and spatial occupation of the future highway. Moses on the other hand took a technocratic approach through his

---

[51] Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution*, 17.

imaginary. He saw planners and engineers as the authorities that could make the tough, but necessary decisions, to rearrange Baltimore. More so, his proposed structures would reconfigure the urban landscape to serve the needs of those who were located outside of the city boundaries.

This chapter pointed to the need to account for how planners use space within their proposals for future material structures and systems. It also points to how the concept of infrastructural imaginaries can highlight the representations of space made by planners and engineers when designing new projects. This work provides a helpful addition to the concept of sociotechnical imaginaries as it explicates the spaces where sociotechnical activity happens, but it also where these plans contain powerful assumptions, appropriations, and repurposing of social practice. One place we see the displacement of socio-spatial priorities is in Moses's commitment to building an expressway in the Franklin Corridor as a way to clear out blight in the city. Rather than considering the institutional practices that produced the 'blight' in the first place or the residents who reside in this neighborhood, Moses argued that the space was best suited for commuters needing to work in the central city.

Neither Geddes's nor Moses's exact vision came to fruition. Yet, both planners' infrastructural imaginaries traveled into the future as cities were forced to grapple with the on-the-ground realities of highway building. Not only did these structures require significant investment, highways also eliminated houses and businesses, subsequently reducing a taxable base. Thus, as highway building began in earnest following the Federal-Aid Highway Act of 1956, planners and urban inhabitants needed to make difficult trade offs between the promises made by a coming technological modernity and the demands of

displaced populations. The following chapters examine how these contestations unfolded in the city of Baltimore during the late 1960's and early 1970's. While this time period might seem distant from the time of Moses and Geddes, the two designers demonstrate how early plans for highway development were coupled with visions of an improved, modernistic future. As we will see, activists who resisted highway building plans often needed to challenge not only the expertise of planners, but also how these professionals embedded their assumptions of social practice into the urban environment itself. Examining the work of Geddes and Moses helps to historically contextualize the linkages between space and social life as infrastructural imaginaries travel, expand, and move into the future.

Chapter Three – Relocation Action Movement and the Production of Urban Space

I: Highway to Nowhere

In western Baltimore sits a 1.32 mile stretch of road. US-40, as it is officially named, lies as a submerged canyon of six lanes running east and west. To the north of the crevice is West Franklin Street, to the South, West Mulberry Street. When searching for the road, you might be better off using its nickname the 'highway to nowhere.' It comes up in a search on Google Maps. Also visible in Google Maps, upon switching to satellite view, is a foot trail running north to south across freeway dividers, reuniting a divided Fremont Avenue. This foot trail, visible on high, preserves a resilient remnant of a once lively thoroughfare now divided by the flawed ambitions of highway engineers and urban planners. Zoom out a bit further and you'll learn how the highway picked up its disparaging name. The 1.32 miles has the body of a freeway, but one supported by a compromised circulatory system. It feeds on local roads, bringing drivers into its great expanse only to narrow soon after. The 'highway to nowhere' will not connect you to any other major roads, it blocks your passage to the essential artery of I-95. A highway in form, but not in function. The 'highway to nowhere' might best be understood as an asphalt grave marker: here lies the community of Harlem Park, here lies homes and shops, here lies a road that never did much of anything.

The road once had much loftier ambitions in the civic imagination of Baltimore's leaders. A highway would modernize Baltimore, providing a straight conduit from the newly populated suburbs to downtown amusements and lucrative shopping districts. Plans began in earnest for a roadway that passed through this area in 1942. At that time, a group assembled by the city proposed three routes that would bring east-west traffic into the center city of Baltimore. One of these routes included the depressed highway mentioned

above, often referred to as the Franklin-Mulberry corridor.[1] Utilizing the corridor became a shared feature of most highway proposals for the city. The first moment of public outcry against highway efforts came in 1944 when Robert Moses and W. Earle Andrews released the *Baltimore Arterial Report.* The suggestions of this document call for a freeway that cuts through the city, transforming row houses into asphalt stretches. Herbert Brune, a member of the Harbor Crossing-Freeway Committee, questioned how this freeway could help Baltimore "when it poses a mountain of human misery."[2] Moses's plan, if completed, would raise taxes and displace 19,000 individuals.

Displacement was, of course, an essential part, rather than an unfortunate consequence of the plan. For Moses, freeways modernized the depressed US cities of the 1940's. Writing for *The Atlantic* in 1945, Moses argued that the construction of railways and municipal transportation lines forced prosperous citizens into suburban regions. Those who could not afford to leave the city contended with the squalor of slums. To eliminate slums, Moses suggests building freeways through these blighted areas, thereby allowing suburban populations a mechanism to easily travel back into the city. In the article, Moses positions himself and urban engineers as reformers who can cut through bureaucratic red tape to solve critical issues. His insistence on the empiricism of the planning profession separated him from politicians too corrupt or too beholden to their constituencies to make level decisions regarding infrastructural development. Eliminating the existing slum

---

[1] Andrew M Giguere, "'…and Never the Twain Shall Meet': Baltimore's East-West Expressway and the Construction of the 'Highway to Nowhere.'" (Thesis, Ohio University. 2009): 76.

[2] Herbert M. Brune, "Analysis of Freeway Proposal" 11 Oct. 1941; Movement Against Destruction Records; Series VII, Box 7A, Folder 1; University of Baltimore Special Collections and Archives. 1.

conditions and creating a freeway that brings the affluent to a centralized business district would greatly improve the overall health of Baltimore. Moses asserts that developers and power brokers of the previous era left a grave debt "in the form of high taxes, bad living, economic dry rot, humiliation, disease, and crime."[3] The solution to these problems is the transformation of urban space, slums into thoroughfares.

Moses's exact plan never came to fruition, yet the route he put forth served as the base for city planners and highway builders of the coming decades. Highway plans for the city of Baltimore went through countless iterations between 1942 and the mid 1970's. Each proposal faced significant public resistance. Additionally, infighting amongst planners in the city often delayed or stalled plans. As Robert Gioelli observes,

> Despite this apparent consensus over the need for a citywide highway network, infighting among planners, engineers, politicians, and business leaders had hamstrung Baltimore's attempts to build an urban highway system for much of the early 1960s. By the middle of the decade, politically connected preservationists and architects began to cry foul, arguing that the highway would rip away at the city's historic fabric.[4]

Even within the multiplicity of route proposals, the Franklin-Mulberry corridor was continuously chosen as a neighborhood through which to place an arterial route to transport drivers into the central city area. The totality of these proposals, their frequency

---

[3] Robert M. Moses, "Slums and City Planning." *Atlantic Monthly.* (Jan. 1945): 63-68.

[4] Robert Gioielli, "'We Must Destroy You to Save You': Highway Construction and the City as a Modern Commons." *Radical History Review* 2011, no. 109 (2011), 65.

and similar ideas for transforming the landscape of Baltimore, amounted to a program of slum clearance through different means. Plans, as they amassed year over year, understood the area slated for destruction as already degraded and therefore vulnerable to state condemnation and control.[5] The accumulation of proposals led to diminished investment in their upkeep, further driving down property values. By the time of the passage of the Federal-Aid Highway Act of 1956, when funding highway projects finally became economically feasible for many urban areas, the city of Baltimore had, without lifting a shovel, razed a neighborhood through civic neglect.

Within Baltimore City, social understandings and appropriations of space played a profound role in both the planning of roadways and the organized resistance to these structures. By continuously proposing new and reimagined uses for the Franklin-Mulberry corridor, the work of planners simultaneously vacated the already existing meanings, uses, and values that made up this geographic area. Conversely, when activists responded to these threats, they developed a politic that countered an administratively rendered notion of their neighborhood. A battle emerged over the use, meaning, and future of the Franklin-Mulberry corridor. In the previous chapter, the infrastructural imaginary sat isolated within the future oriented visions of planners. Here this concept is expanded to account for the relationship between proposed material form and the established or existing social, spatial, practices within Baltimore City. Widening the conceptual framework of the infrastructural imaginary, from an individual vision to a collective one, assesses how diverse scales of meaning making come to coalesce around the emergent material form.

---

[5] Rose and Mohl. *Interstate: Highway Politics,* 97.

This chapter examines the relationship between spatial environments and infrastructural forms by looking at urban highway planning and urban resistance in the 1940's - 1960's. This analysis applies Lefebvre's conceptual triad of spatial practice (perceived space), representations of space (conceived space), and representational space (lived space) as introduced in chapter one. The productive tension between these multiple scales of analysis often surfaces in academic accounts of infrastructures. For instance in *Roads: An Anthropology of Infrastructure and Expertise* by Penney Harvey and Hannah Knox does the pair examine how highway infrastructure comes to constitute new spaces of civic interaction and engagement. They write,

> Roads as infrastructural forms manifest the political, not just through the transformations that they promise but also by *arranging and rearranging the mundane spaces of everyday life*. Roads create spaces for institutional forms of governance exercised not just by elected state representatives but also by the inventions and interventions of designated experts… and the devices and instruments they create and deploy.[6]

Harvey and Knox understand the road as a political form that differentiates spaces through competing forms of knowledge and material production.[7] Their work has been formative generating new scholarship in infrastructure studies that articulates the relationship between emergent material systems and their attendant modes governance. In this account

[6] Penny Harvey and Hannah Knox. *Roads: An Anthropology of Infrastructure and Expertise* (Ithaca: Cornell University Press, 2016) 7-8.

[7] Ibid, 187.

I explore a similar relationship between emergent systems and socio-spatial production. I contend that examining the processes through which space comes to be constituted can inform how we conceptualize potential collective interventions within our environments.

This chapter begins by examining early proposals for interstate route selection and development, looking at how planners and engineers aimed to change the spatial environment of cities; I pay particular attention to how these parties understood highways to interact with the physical environment and how this ordering, in turn, fractured accessibility to the urban landscape. Then I turn to 'freeway revolts'. These disparate social movements occurred in cities across the US, resisting the incursion of highway infrastructure into urban space. Here I examine how the existing spatial practices of residents informed organized resistance. I push back on existing accounts of these struggles to suggest that attention to organizational tactics erases the heterogeneity of these movements. Instead, I look to how protesters perceived contested space, to suggest that geographical difference proved a formative element of these disparate movements.

Finally, I return to Baltimore and origins of the 'highway to nowhere'. Baltimore and its struggles over roadway infrastructure serves as a well-documented case within the literature on 'freeway revolts.' Many of these accounts examine the efforts of a group called Movement Against Destruction (MAD) that successfully prevented most development within Baltimore. MAD's work is often presented as a success story for both mostly stopping the road, and uniting disparate populations across lines of race and class. My account focuses on Relocation Action Movement (RAM), an earlier group that eventually became a part of MAD. RAM's work spoke to a future modality of urban life, one rearranged by the highway but also one where displaced residents could continue to occupy urban

space. Additionally, the work of RAM proved formative, if ironically so, in the construction of the 'highway to nowhere'. This imaginative register deserves probing as it suggests that success as defined by activists proved a spatially relative and oftentimes contradictory conceptualization.

II: Representations of a Highway

The Federal-Aid Highway Act of 1956 allocated about 25 billion dollars toward the construction of Interstate highways and freeways. Under this legislation, local municipalities paid 10% of the costs of building these roads with the federal government covering the other 90%.[8] These incentives encouraged a nationwide scramble of civic leaders and representatives to write new or implement long awaited road proposals that could qualify their districts for allocations of federal funds. The windfall of funding also became a way to rebuild within urban areas facing traffic congestion and post-war economic malaise. Local officials, engineers, and planners echoing the sentiment of Robert Moses in *The Atlantic*, saw interstates as a mechanism to bring the affluent back into the city from the suburbs, jump starting business and central economic centers left behind during the postwar years.

Interregional Highways, a 1944 report written by the presidentially appointed National Interregional Highway Committee and headed by Bureau of Public Roads director, Thomas MacDonald, gives an early and accurate foreshadowing of the system of roads that would emerge following the 1956 Act. Indeed, much of the report deals explicitly with how

[8] Ibid, 89.

to repopulate cities, specifically the central business districts now encased by blight.[9] In this report, the committee maps the nationwide system, discussing the different challenges associated with drawing together the heterogeneous topography of cities, suburbs, and rural lands. What stands out in this report decades after its publication is not the accuracy to which the plan maps to the eventual built infrastructure, but rather the representations of space that guided the project.

Lefebvre understood representations of space as "tied to the relations of production and to the 'order' which those relations impose."[10] He remarks elsewhere that conceived space is the land of the planner, the engineer, and urbanist - those professions most concerned with processes of geographical ordering. It is helpful to think of the *Interregional Highways* document as not just a policy proposal, but rather a radically novel plan for reordering the physical landscape which subsequently alters how that space can produce value through economic growth. For the authors, highways of the past have already demonstrated the ability to redistribute the social geography of a city. They write, "So long, however, as the central areas of the cities are poor places in which to live and rear children, people will move to outskirts. Undoubtedly a factor that has facilitated this movement has been the improvement of highways."[11] They demonstrate this growth through population maps of cities; Baltimore, Washington DC, and Chicago. The central city of 1800 expands outward along tentacled highways as decades pass. The population lines grow thicker and

---

[9] United States. National interregional highway committee., . *Interregional highways: Message from the President of the United States, transmitting a report of the National interregional highway committee, outlining and recommending a national system of interregional highways*,Washington: U.S. Govt. print. off., (1944), 53-71.

[10] Lefebvre, *The Production of Space*, 33.

[11] United States, *Interregional Highways*, 54.

bulging, a vibrant and glowing nervous system.[12] If roads make possible the dispersion from center to periphery, then the committee presumes, they should be able to facilitate the opposite.

To do this, the report authors suggest constructing the now ubiquitous arterial and circumferential routes well established within contemporary cities both large and small. Arterial routes lead to a central destination, normally marked by financial centers, luxury housing options, and cultural landmarks. These roads have limited points of entrance and egress to reduce traffic congestion. The document suggests beginning these roads in suburban regions to encourage city-bound travel from these areas.[13] Circumferential routes on the other hand direct traffic around the city. "Generally such routes can be so located as to serve both as arteries for the conveyance of through traffic around the city between various distribution routes for the movement of traffic with local origins and destinations to and from the various quarters of the city."[14] These two types of routes, when brought together tend to resemble the spokes of a wheel laid across city space. Two clear goals of these paths emerge, the first pertaining to efficiency. Arterial roads create a path with limited options aimed to get one populace to a central destination as expeditiously as possible. Secondly, the beltway routes aim to reduce congestion and enhance road safety by shuffling thru traffic around this central area - either to bypass it completely or to travel to adjacent city or suburban areas. These roads, as they were planned, were technically never intended to serve populations through which they passed.

---

[12] Ibid, 55.

[13] Ibid, 64.

[14] Ibid, 65.

The understanding of urban highway construction as it emerges from *Interregional Highways* evokes Lefebvre's conceptualization of abstract space. Abstract space is produced through three interactive processes: homogenization, fragmentation, and hierarchization.[15] As Lefebvre writes of abstract space,

> As a product of violence and war, it is political; instituted by a state, it is institutional. On first inspection it appears homogeneous, and indeed it serves those forces which make a *tabula rasa* of whatever stands in their way, of whatever threatens them - in short, of difference … the notion of the instrumental homogeneity of space, however is illusory - though empirical descriptions of space reinforce the illusion - because it uncritically takes the instrumental as a given.[16]

The creation of highways intends to create, however illusory, the impression of national homogeneity. The highways eventually become a given of the landscape, a necessity, a defining and innate feature. Building highways did not just aim to make travel faster. Building these structures enacted a political project of economic growth through the appropriation of urban space. More so, as legal theorist Chris Butler writes, abstract space fosters a tendency towards fragmentation, "slicing of space into discrete parcels, the privatization of these spatial fragments through legal decree, and their entry into circuits of

---

[15] Chris Butler, "Abstraction Beyond a 'Law of Thought ': On Space , Appropriation and Concrete Abstraction." *Law and Critique* 27, no. 3 (2016), 253.

[16] Lefebvre, *The Production of Space,* 285.

capital accumulation."[17] These fragments are then arranged so as to produce a hierarchy of value and power - as demonstrated by the material construction of the road positioned towards a central axis. The insides, those areas segmented and fractured, become excised from the city as a whole, and removed from opportunities for growth.

Abstract space intentionally divides and excludes - it produces a physical rendering of political priorities often implemented through material orderings. The standards for urban sections provided in *Interregional Highways* make sure of this. Take for instance the *Conditions of Access* standard, which reads, "All urban sections of the system shall be established as limited access highways, and access to the highway shall be permitted only at designated points." Or, the suggestions for '*Elevations and Depression'* which states "to avoid frequent intersection with other streets or highways, it is necessary to elevate or depress sections." These two standards, just a few in an appendix of many, show how the roads produced spatial inaccessibility through material renderings of the landscape. Urban highway systems intentionally bypassed densely populated areas within the city. Adding addition on-routes or bus lanes, thereby increasing access would reduce the efficacy and stated goals of the overall system.

Yet, no contingency plan existed for the fragmented spaces now 'road-locked' and disconnected from rest of the city. Upon the eventual passing of the Interstate Highway Act federal funds could only go towards roadway projects that connected to the interstate. The narrowness of qualified projects under the Act excluded other possibilities for civic infrastructure that could solve mobility and transportation problems now faced by citizens who lived in proximity to the highway in urban areas. *Interregional Highways* actually

[17] Butler, 253.

foresaw how building created a problem to access - they proposed that road building be done in conjunction with other urban projects. They write, "Wherever it is possible to do so, the location of interregional routes in cities should be considered simultaneously with the projected location of new housing developments, city centers, parks, greenbelts, and other contemplated major changes in the existing city pattern that call for the acquisition of land in large tracts."[18] This nod to a hope for comprehensive urban planning fell to the side following the passage of the 1956 Act. Eisenhower, who signed the bill, found simultaneous road and housing overhauls too expensive for the federal government to manage.[19] Highways of the 1940's and 1950's aimed to solve a traffic problem, but in the meantime, ended up creating problems of housing shortages, lack of public transportation, and truncated urban mobility. Fundamentally, the incursion of highways into the urban space threatened the established spatial practices of residents.

Even a cursory reading of the *Interregional Highways* plan suggests that although the construction of the Interstate system framed itself as a comprehensive public works project, a work in service of the public good, the public that benefited from such construction was a geographically disparate body. Urban interstates were designed with the intention of funneling people and cargo to and from cities, with little regard for those who already occupied urban space. The report speaks of slums, blight, and rehabilitation without referring to the homes, schools, and parks that already laid claim to space. Indeed, many of the proposed routes of the interstates, through geographical fragmentation, limited physical mobility and access to surrounding urban areas. As Anthony Foxx, former

---

[18] United States, *Interregional Highways*, 67.

[19] Mohl and Rose, *Interstate: Highway Politics,* 61-63.

Transportation Secretary under President Obama, who grew up in a neighborhood encased by I-77 in South Carolina, recalled in a speech "it became clear to me only later on that those freeways were there to carry people through my neighborhood, but never to my neighborhood."[20] Through and not to captures the very essence of abstract space - a material representation that flattens space while it divides and excises those considered politically, or in this case, spatially undesirable.

III: Disrupting Spatial Practice

Plans for urban highways did not just present a new vision for cities of the 1960's; they worked as a mechanism of human and spatial erasure. Not surprisingly, plans became highly contested. As Raymond Mohl and Mark Rose write in their history of interstate policy, "The consequence of state and local route selection was that urban expressways could be used specifically to carry out local racial, housing, and residential segregation agendas."[21] Chasms formed between the modernistic visions of federal policy, the local desires of state and municipal leadership, and the people who fell in the path of roadway proposals. These divides produced wide discord and resistance to planning efforts. Across the United States, urban populations fought against freeway building efforts through protests and legal challenges. These pockets of resistance are broadly known as 'freeway revolts'.

Worth noting here is the distinctly urban character of these movements. As forecasted by the *Interregional Highways* document, city spaces that accounted for the least

[20] Ashley Halsey III, "A Crusade to Defeat the Legacy of Highways Rammed Through Poor Neighborhoods." *The Washington Post*, (March 28, 2016. Accessed October 21, 2017).

[21] Mohl and Rose, Interstate: Highway Politics, 97.

amount of mileage proved the most trying segments of the system to build.[22] As Raymond Mohl writes,

> These (rural) segments of the system were relatively uncomplicated and built fairly quickly despite extensive mileage. By contrast, the shorter urban sections of the Interstate system involved numerous human and engineering complexities—difficult and costly right-of way-acquisition, relocation of utilities and rail lines, the destruction of residential neighborhoods and small businesses, and the displacement and relocation of hundreds of thousands of people.[23]

To put it another way, the homogenizing features of the highway had heterogeneous impacts based on the physical environment in which they were built. Building a highway did not produce the same social, political, or cultural effects universally. Lefebvre's concept of the 'Right to the City', as conceptualized in the *The Production of Space,* offers a mechanism for challenging governing impulses towards sameness. As Edward Soja summarizes, "the urban dweller… has specifically spatial rights: to participate openly and fairly in all the processes producing urban space, to access and make use of the particular

---

[22] United States, *Interregional Highways*, 83-88.

[23] Raymond Mohl, "Citizen Activism and Freeway Revolts in Memphis and Nashville: The Road to Litigation." *Journal of Urban History* 40, no. 5 (2014), 872.

advantages of city life, especially in the highly valued city center (or centers), to avoid all forms of imposed spatial segregation and confinement."[24]

I bring up this conceptualization not to specifically characterize resistance to highway development as a 'Right to the City' movement. This would be ahistorical at best and presumptive at worst. Rather, I want to suggest that urban highway development, the representations of spaces put forth by planners, threatened established spatial practices and routines of the lived city environment. Because no city, no planned route, no affected group of people was the same or impacted similarly, their forms of organization responded to their unique arrangement within the urban environment. "The spatial practice of a society secretes that society's space," writes Lefebvre.[25] Here he brings forth a dialectical interaction between our lived experience and the geographies, materials, and people we encounter during that process. Spatial practice evokes how we learn to interact, and move through 'real' space. The relationship is adaptive and generative. It is grounded in the historical experience, material unfolding, and usage of space.

When discussing 'freeway revolts,' scholars often understand these occurrences as either a part of concurrent civil rights struggles, or build comparative accounts that look at why one movement was successful in stopping efforts while another failed. The latter work tends toward emphasizing the actions taken by middle and upper class populations, leaving, as Robert Gioielli points out, "urban racial minorities and working-class groups"

---

[24] Edward W Soja, *Seeking Spatial Justice* (Minnesota: University of Minnesota Press, 2010), 99.

[25] Lefebvre, *The Production of Space,* 38.

under examined.[26] If anything, the literature on 'freeway revolts' suggests that most of these movements find similarity only in their genesis: the manic push to build following the 1956 Federal-Aid Highway Act. Although this Act renewed interest in arterial and circumferential urban routes, these were often not new plans. Rather, as occurred in Baltimore, planning efforts began in the early 1940's but lacked a federal mandate.

The problems of Baltimore repeated in cities across the United States. Memphis, Miami, San Francisco, Washington DC, Nashville, New Orleans, and many other cities formed groups that worked to end road-building efforts. Each city responded differently. Some areas framed expressways as harmful to the environment through car emissions, noise pollution, and the elimination of parkland. Others turned to historic preservation to save buildings or other important urban landmarks. Even more understood highway development as racially motivated violence against minority populations.[27] While underrepresentation of disenfranchised populations within this literature remains a problem, the overarching emphasis on organizational tactics also tends to obscure the material and physical practices that structured citizen engagement. Indeed, the wide variety of organizational tactics demonstrate the extent to which existing spatial practices informed the character and processes of 'freeway revolts.'

This wide variety of approaches does not imply that all tactics proved equally impactful. As Raymond Mohl describes in "Citizen Activism and Freeway Revolts in Memphis and Nashville: The Road to Litigation" the techniques to stop the road differed

---

[26] Robert Gioielli, "Highway Construction and the City as a Modern Commons," 64.

[27] Raymond Mohl, "Stop the Road: Freeway Revolts in American Cities." *Journal of Urban History* 30, no. 5 (2004), 676.

greatly in efficacy. Simply put, some cities stopped the road, while others were unable to. In Memphis, Mohl recounts not a mass community group or protest, but rather the concerted efforts of a small group that wanted to prevent I-40 from bisecting Overton Park.[28] He traces a tireless letter writing campaign that addressed federal and local policymakers, spearheaded by a woman named Anona Stoner who eventually turned to the courts to preserve parkland. The case made its way to the Supreme Court where "In a unanimous decision, written by Judge Thurgood Marshall… found that DOT Secretary Volpe had erred in failing to issue a formal finding that there were no feasible or prudent alternatives to the Overton Park expressway."[29] This legal case eventually halted plans for the route through the parkland. Mohl compares this to efforts to stop I-70 in Nashville, led by "black professionals," who failed to convince a judge that route selection was deliberately geographically discriminatory despite evidence that plans had been kept hidden to prevent public input.[30] Mohl's comparison of the two events deemphasizes the clear racial elements at work in these two resistances. Instead he suggests that success in stopping road building had more to do with the good timing of Stoner's campaign[31], rather than fully acknowledging the significance of deliberate obstruction on the part of planners in Nashville. Mohl's conclusion demonstrates the need for accounts of 'freeway revolts' that recognize the role of the complexity of social and spatial difference in organizational resistance.

---

[28] Mohl, 2014, Citizen Activism, 874.

[29] Ibid, 878.

[30] Ibid, 884.

[31] Ibid, 885-886.

In chapter five, greater examination will be given to how courts intervened in interstate highway planning and came to privilege certain spaces, such as parkland over others. Yet for now, turning back to the previous section, I want to draw attention to how representations of space produced different valuated landscapes within urban environments and amongst activists. The reorganized urban landscapes proposed by highway planners also enacted a spatial practices of inclusion and exclusion by deliberately eliminating homes, bodies, and spaces that failed to fit into the vision. From this perspective, the practices and the perceived understandings of space possessed by residents fell out of view unless they could be appropriated into the modernistic impulses of the interstate project.

In 1977, as she was waging her letter campaign, Anona Stoner sent a photo book to the Secretary of the U.S. Department of Transportation to show "the character of the Overton Park." The collection of images presents a combination of the shocking and the mundane. The cover is taken from a 1970 issue of *Memphis Architecture*. A black and white forest background is bisected by a thick white line that vertically divides the page. The cover conjures up images of the road, of the erasure of the nature threatened on the horizon. The white line is void of any content other than its physical disruption. The pages continue like a homemade scrapbook of both the natural elements of the park, as well as its public uses. Each page contains a different view of how the park is used. A child stands alone surrounded by overarching fauna, a couple reclines on a picnic blanket, Girl Scouts gather for an annual event, the bear at the adjoining zoo looks inquisitively at the camera. The right of way for the I-40 route would destroy this landscape, these pleasures, and these

activities.[32] The photo book did not sway the DOT or the courts to halt the road, but its mere existence shows how practice and established communal uses of space comprised efforts towards resistance. Indeed, the secrecy of planning efforts in Nashville through inadequate public hearings,[33] suggest a complete disregard by planners to account for local conceptions of space.

This ignoring of established spatial practice, the privileging of expertise over experience, reoccurs across scholarly accounts of 'freeway revolts.' Gioielli in his history of Baltimore highway resistance suggests framing building projects as "a form of enclosure - the taking of commonly available resources and redistributing them to a privileged few."[34] This reconceptualization also proves helpful in our current discussion. The process of enclosure lays claim to a spatial environment and reorders it using a different logic. The spaces that experience enclosure must then rearticulate their relationship to the environment as both lived and experienced, but future-oriented as well. This proves especially true in Baltimore where the process of highway proposals left a legacy of poor living conditions. This material experience of spatial decline produced the arguments and tactics eventually used to fight the road. As Gioielli writes,

> They based their disapproval of the highway construction project not on their conjecture of what the highway was going to do but on what it had

---

[32] Citizens to Preserve Overton Park, "Citizens to Preserve Overton Park Album." Memphis and Shelby County Room, Memphis Public Library & Information Center. Drawer 3, Folder 19 (1972. Accessed 3 October, 2017).

[33] Mohl, 2014, Citizen Activism, 884.

[34] Gioielli, We Must Destroy You, 63.

> already done. Decades of planning, condemnation, and land clearance had taken a real, physical toll on many central city neighborhoods. When African American and working- class white groups spoke in opposition to the highway, they spoke with the knowledge of experience.

As we turn to the next section, these words prove instructive. The eventual building of the 'highway to nowhere' was predicated upon this knowledge of experience, not only the material experience, but the spatial one as well.

IV: Living Amongst Future Spaces

Protests against the exclusionary enclosures of space became one of the key arguments made by Relocation Action Movement (RAM) in their actions contesting highway and housing condemnation plans. Archival documents left by organizers of the group tell the story of a group who wanted to develop a plan for urban highway infrastructure that could also incorporate the communities that would be destroyed to pave its way. These documents are a part of the larger archive for Movement Against Destruction housed at the University of Baltimore Langsdale Library. RAM left a number of documents that described meetings with civic officials, official position statements, and newsletters. Most of the group's self-documented activity took place in the late 1960's, primarily 1966-1969. Many members of RAM hailed from the Franklin-Mulberry Street corridor in the Harlem Park neighborhood, a lower class enclave of mostly black residents, or the more

middle class, historically black, neighborhood of Rosemont.[35] In the mid 1960's, the most recent proposal for an east-west expressway was the 10-D plan, which faced public comment and resistance from residents. Despite public outcry, condemnation orders for this area were issued by the city council beginning in November of 1965.[36] It was then that RAM began gathering signatures, protesting freeway development, and meeting regularly as a group.[37] RAM's activism and larger goals did not look to stop expressway development; rather its members demanded a fair market value for the homes affected by condemnation ordinances. RAM's activism emerged as a direct response to the proposed infrastructure that would eliminate houses, businesses, and community space. In a self-written history of the organization, members make connection explicit.

> The increased deterioration of neighborhoods in a predominantly Negro community in the path of the proposed East-West Expressway was alarming many area citizens. The decline in services from the Department of Sanitation, the lack of adequate police protection, the haphazard method of appraisals and acquisition of property, and the unreasonably low prices the state was offering homeowners, caused area residents to ban together in an effort to seek more just and responsible treatment from the city and state

---

[35] Emily Lieb, "Row House City: Unbuilding Residential Baltimore, 1940–1980." (Dissertation, Columbia University: 2010), 138.

[36] Giguere, "And never the twain shall meet", 144.

[37] "Relocation Action Movement," 16 Jan. 1968; Movement Against Destruction Records; Series 7, Box 7, Folder 105. University of Baltimore Special Collections and Archives. 3.

agencies who were totally ignoring the people who lived in the homes they were ruthlessly destroying.[38]

The proposals for new roadway development in Baltimore assumed a future modality; this infrastructural imaginary came at the exclusion of those who lived in the pathway of the road. Turning back to our earlier discussion, we see how this history works to lay clear the divide in representations of space and existing spatial practice. RAM challenged the representations of urban space conceived by planners by asserting their daily inhabitance and use within the contested space. The residents of the Franklin-Mulberry corridor responded to their potential exclusion through the physical construction of the road, but to how the historical legacy of road proposals systemically devalued property values and rearranged the perceived arrangement of space.

This relationship brings us to Lefebvre's third element of the conceptual triad, representational space. He understands this space as "lived through its associated images and symbols and hence the space of 'inhabitants' and 'users'… this is the dominated - and thus passively experienced - space which the imagination seeks to change and appropriate."[39] Representational space requires analysis and reflection. It is temporally delayed, the product of reworking of the representations of space and spatial practice. Secondly, representational space works in concert with imagination. These spaces present new possibilities for the organization of the world. In some ways this distinction is familiar terrain for scholars within STS. Take for instance, David E. Nye's discussion of the

---

[38] Ibid, 3.

[39] Lefebvre, *The Production of Space,* 39.

technological sublime, which demonstrates how lighting changed the context of objects, impressing the power of natural beauty and the ability of technology to change its appearance.[40] The introduction of this technology 'edited' the landscape, allowing people to visually interpret environments in a way not determined by the logic of the technology itself nor how it is perceived. It provoked a new language, textually and artistically, to interpret the changing landscape.[41] I RAM's activism works in the realm of representational space. The group acknowledges and constructs the historical representations of space into their history, mission statements, and larger activism. But more substantially, they all utilize their existing spatial and their current occupation of the physical landscape to imagine a more inclusive future - where both road and resident can coexist.

To eliminate impoverished areas in the name of progress meant dispossessing citizens of their claim to this space. To reconfigure this plan, RAM's work responds to the neglect imposed upon occupants by their erasure from the social and spatial imaginary. The group stressed that not only were they not being fairly compensated for their physical relocation, they also were asked to sacrifice their place in the city altogether. Mourning this loss, organizers wrote, "This expressway was uprooting them from their own homes and leaving them stranded without enough money to purchase another home in a city which does not provide for the adequate rehousing of its relocated citizens."[42] The condemnation orders delivered a sense of erasure to residents prior to any physical development. To

---

[40] Nye, *Electrifying America,* 59.

[41] Nye, 77-79.

[42] "Relocation Action Movement", 3.

accept the freeway meant not only a loss of one's home, but also the loss of the ability to make a spatial claim within Baltimore proper.

In a meeting with the Governor of Maryland Spiro Agnew, and other bureaucratic officials in the winter of 1968, RAM argued against condemnation orders by focusing on a larger structural conception of discrimination enacted through infrastructural policy. The argument became one of justice predicated on the right to live within, support, and make claims to urban space.

> For too long the history of Urban Renewal and Highway Clearance has been marked by the repeated removal of black citizens. We have been asked to make sacrifice after sacrifice in the name of progress, and when that progress has been achieved we find it marked "White Only"."[43]

The activists voice a direct relationship to the ideas of progress, the representational idiom, put forth in the interstate project and politics of spatial exclusion. Later in their proposal, they expose the cost-benefit-analysis practices of city engineers and urban planners as perpetuations of segregationist policies.[44] Rather than looking at the potential fiscal benefit of constructing rivers of concrete, RAM demands a reappraisal of this calculus to one that treats existing residents as already valued and not disposable. They insist upon expanded housing options and an assessed market value of houses that provides enough

---

[43] Ibid, 6.

[44] Ibid, 9.

compensation so as to relocate (or develop new housing) without any undue financial burden.[45]

Surprisingly, stopping road building efforts did not factor heavily into the aims of RAM. Rather, the group configured itself as obstructive until fair compensation was allotted and guaranteed for those who faced displacement. Nowhere is this more evident than in the position taken by the organization that "Unless those being victimized are treated like human beings, "NO EXPRESSWAY WILL PASS THROUGH OUR CITY!!!" [Emphasis in original].[46] RAM claimed community ownership of the urban spaces its members occupied. The rhetoric and policy alternatives put forth by RAM members organized around the concept that the people, homes, communities, and cultures within the threatened Franklin-Mulberry Corridor contained value through the spatial practice of its residents. The plans for highway infrastructure denied citizens and their material property this recognition from the state. If the city saw greater benefit through replacing this practice, residents' lives and homes must be assessed at equal value. Additionally, RAM argued that if a roadway materializes, it should primarily benefit the community through which it passes. The highway thus would be guided not by the modernistic impulses of a new urban reality, but rather a representational space where neighborhood residents had more agency in how space was transformed. Proposals to enact these practices a reality included the prioritization of black, local, contractors in the awarding of expressway contracts, job-

---

[45] Ibid, 8.

[46] Ibid, 1.

training programs to staff construction projects, and the development of integrated mass transit options alongside expressway infrastructure.[47]

RAM activists reconfigured expressway policy proposals to speak to a representational space where displaced inhabitants could continue to occupy rather than face asphalt erasure. These voices understood that the initial plans disrupted established practices in favor of novel representations of the Franklin-Mulberry Corridor. Yet, rather than dismissing development outright, they suggested an infrastructure that understood current residents as valued from both an economic and spatial perspective. Their existing spatial practices, while embedded within the neighborhood, responded to the representations of space constructed through the planning idiom. At the heart of these claims is the assertion that the existing housing and cultural infrastructures threatened by an arterial expressway were important to the civic and community life of Baltimore's citizens.

The group proved successful in some of its goals. As Andrew Geiger writes, "RAM managed to influence the creation of a state law that would compensate displaced individuals with not only money to cover the replacement value of their homes, but also a subsidy of up to $5,000 to help homeowners cover the cost of moving."[48] The focus of RAM transitioned as their projects joined with Movement Against Destruction, which eventually sought to stop development outright. Yet, these early efforts suggest a consciousness of the impacts the spatial impacts of infrastructure were essential to arguments made by RAM. Activists challenged not just the road itself, but the perceived, conceived, and lived

---

[47] Ibid, 14-15.

[48] Giguere, "And never the twain shall meet", 125.

understandings of space possessed by engineers and planners. RAM used this to challenge the representational arena of public urban space. The group suggested an alternative infrastructural future – a collective imaginary reconfigured towards a spatial body politic. In this idiom spaces ceased to be just slums and instead became contested and politically volatile. Highway developers now needed to account for the voices, bodies, and properties RAM articulated as valued spaces. Through demonstrating how roadway infrastructure worked a mechanism of deletion, the group brought visibility to exclusionary policies made in the name of progress and modernity.

Yet, the work of RAM is directly responsible for the eventual construction of the 'Highway to Nowhere.' The legal battles that granted more compensation to displaced residents also made it possible to clear the space in hopes that a connected highway would follow. This integrated interstate never came to fruition. As Emily Lieb observes in her 2010 dissertation *Row House City: Unbuilding Residential Baltimore 1940-1980*, when the city gave up on highway plans civic leaders hoped the "middle class people would flock back to their neighborhood and life in Rosemont would pick up where it left off, before the highway plans and the condemnations and the vacancies."[49] Years of disrepair and institutional neglect left the area far worse for wear, leaving the excised residents with deep scars of resentment and distrust. The achievement of fair compensation for relocation proved a small victory amongst more substantial losses.

V: The Spaces of Infrastructure

[49] Lieb, "Row House City", 214.

This chapter began by discussing the 'highway to nowhere,' a material remnant of a long-standing battle for claims to urban space. I traced the history of the interstate to early planning documents and examined how planners chose to arrange urban space through bypassing and fragmentation. Then, I examined actions taken by activists participating within anti-highway activism to understand how the spatial practices influenced the content of their tactics. Finally, I turned to the work of RAM to show how representational spaces - that is imagined usages of space - came to inflect the cadence of activist demands in Baltimore. The demands made by activists aimed less to stop the road and more to configure it so it could benefit the area through which it passed.

The work of RAM serves as a snapshot of the work done by activists in Baltimore - and in the nationwide 'freeway revolts.' I highlight RAM as a specific case because of its direct evocations of a representational space when fighting against the incursion of infrastructure. The ways in which activists formulated their arguments for use within the public sphere suggest that the group developed a praxis inspired by an alternative conception of space. Thus, not only did the proposed infrastructure generate a shared understanding of a sociotechnical object, the space it intended to occupy, its practice and its representations, came to texture unique demands made by RAM. The coupling of the social production of space in relationship with a technology sparks the genesis of the infrastructural imaginary. This small case, and the arguments made by activists, allows us to think about the process of infrastructure development as not just socially transformative, but spatially as well. More so, in beginning and ending this account the complicated history of the 'highway to nowhere', we see the importance of considering spatial practices within infrastructural development. The worn footpath visible from satellite image transecting the

‘highway to nowhere’ and reconnecting Fremont Avenue speaks to both the symbolic and the practical. Spaces can be torn apart and materially changed, but its production can remain resilient and resistant.

The production of space, as discussed above, often corresponds with political projects and resistances. Yet, this correspondence does not render all spaces inherently political forms. Rather, as I want to suggest in conclusion, the production of space through practice, representations of, and the representational lens offers a mechanism to understanding how material forms come to structure social, political, and cultural forms of difference. Difference as produced through the fracturing and reassembling of environments is often carried out through the introduction of infrastructural forms. The next chapter looks to expand this examining how social and spatial differentiation came to shape the character of Movement Against Destruction as they resisted highway construction into the 1970’s and beyond.

Chapter Four – Movement Against Destruction and Urban Design Concept Team – Practices of Spatial Differentiation

I: From Cultural to Spatial Differentiation

In the previous chapter I argued that roads, and infrastructure in a larger sense, transform, rearrange, and produce heterogeneous space but are also simultaneously produced by contemporary and a priori geographies. The disinvestment from Baltimore neighborhoods spurred by roadway proposals from the 1940's onward illustrates this relationship. Infrastructure in this case was both conceptually and materially transformative of urban space. In the construction of the 'highway to nowhere', land became of value, but not necessarily valuable, for its ability to easily transport commuters and consumers to the city center. More so, Relocation Action Movement developed a politics of spatial occupation that worked in the representational register. Group members argued for highway infrastructure that could integrate the impacted geographic community into the transformed city space. Representational, orLived space became a potent source from which to draw inspiration in fashioning an organizational politics of resistance. In the previous chapter, understandings of space were examined at the level of political discourse, analyzing how space was constructed, understood, and reimagined by RAM. I utilized Lefebvre's conceptual triad to demonstrate how conceived, perceived and lived space came to pattern the freeway revolt.

As resistance in Baltimore expanded with the formation of Movement Against Destruction (MAD), a group that was made up of residents and civic groups from all over the city, the geographic and spatial character of the movement grew as well. It became more difficult to unite goals, priorities, and claims to the spatial geography of the city.

Growth posed an organizational challenge. In this expanded setting, arguments against road building transitioned from local, geographically specific, concerns to issues that reached a larger number of people and spaces. Simply, uniting the perspectives of geographically disparate groups who faced different potential impacts of the highway-building project, required intense and often critical deliberation. Additionally these formations required the production of new infrastructural imaginaries – conceptions of a collective body politic that could assert novel spatially oriented values.,

Scholars who study 'freeway revolts' often suggest – sometimes tacitly and at other times explicitly – that the social diversity of MAD was instrumental in the group's eventual success in stopping the road. Raymond Mohl perhaps best captures this sentiment. He writes; "The cross-class and multiracial character of MAD took the organization beyond the parochial self-interest of smaller neighborhood groups and conveyed the sense that it spoke for the people against the interests."[1] The earlier discussion of RAM, a community group that eventually joined MAD, and in some accounts is considered an antecedent to the group,[2] challenges this framing. The eventual construction of a highway through the Franklin-Mulberry Corridor demonstrates the difficulty of speaking for multiple interests across disparate groups and environments. Gioelli, an urban historian, takes a more critical perspective. He argues that in the case of Baltimore, coalition building of community groups maintained the city's racial geography. Activist groups, such as RAM, put forth arguments that asserted their ownership and social production of specific spaces. These

[1] Mohl, "Stop the Road, 698.

[2] Sidney Wong, "Architects and Planners in the Middle of a Road War: The Urban Design Concept Team in Baltimore, 1966–71." Journal of Planning History 12, no. 2 (2013), 188.

concepts solidified, rather than challenged the landscape of the segregated city. As he writes, "They were able to work with African Americans because their common enemy, the highway, and not their activism, threatened the racial status quo."[3] By this telling, the diversity of the groups within MAD was driven not by impulses of equality and social justice, but rather smaller, spatially discrete, claims to the preservation urban space (and thus the racial construction of the city itself). Gioelli's research suggests that attuning to the ways in which difference structured the arguments put forth by MAD points to one mechanism of understanding the interventions made by the group.

The following section examines the geographic construction of the groups within MAD. I look at how the different neighborhoods and cultural enclaves impacted by roadway plans discussed and related to the environments they represented. From there I examine MAD's founding tenets and early activities to understand how the group understood their relationship between member groups, participatory activities, and the way understandings of lived space impacted perceptions of the proposed infrastructure. I discuss how they structured their organization to accommodate such a wide variety of participants and perspectives. Following this I discuss how professional expertise and technical knowledge shaped the tactics that came to define the activities of the group. Attention is given to how MAD configured their political activism to engage in practices of civic participation, and how professional and technical expertise influenced these organizational values.

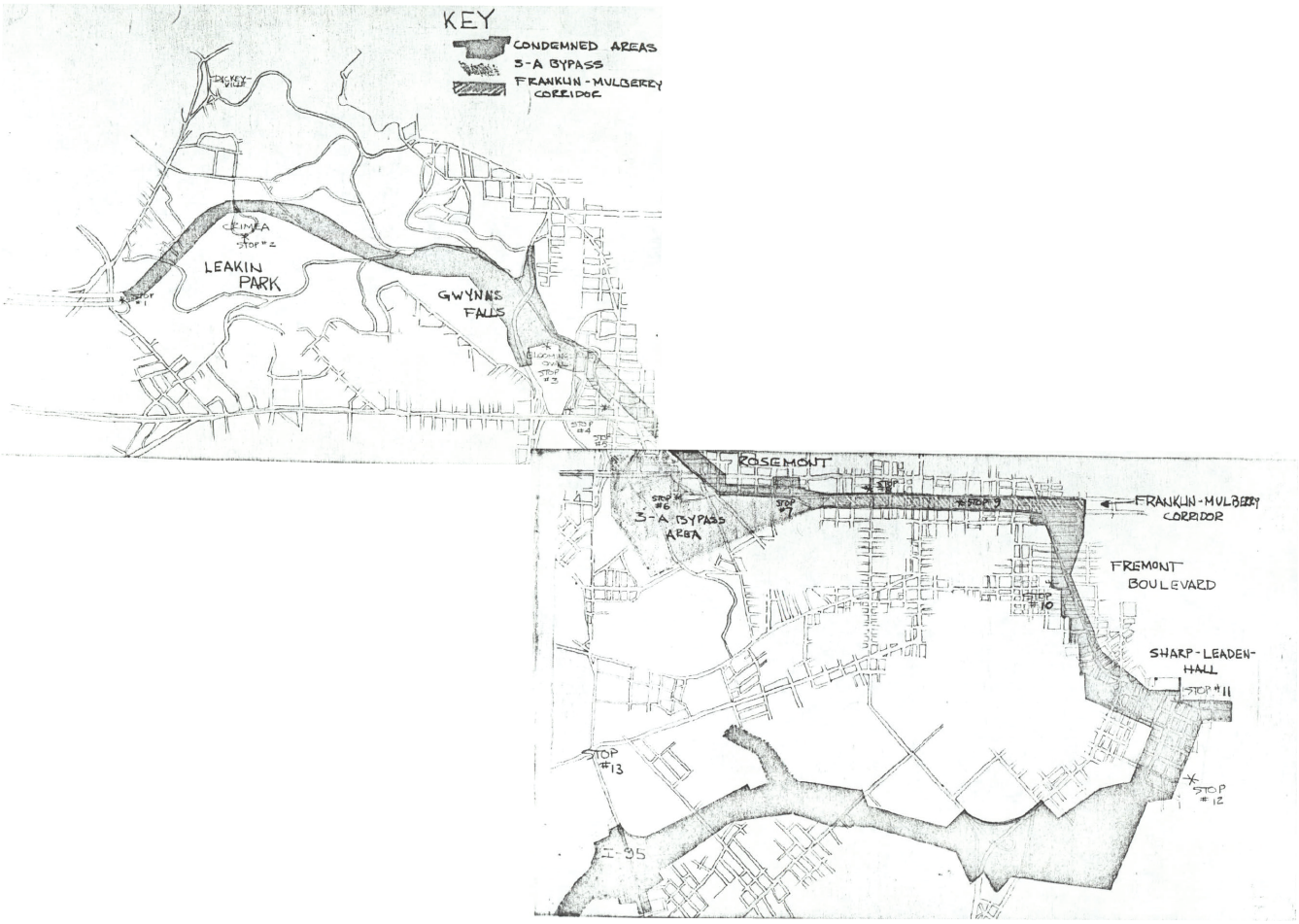
The relationship between activists and experts during road building controversies in Baltimore during the 1960's and 1970's demonstrates how spatial arguments

---

[3] Gioielli, "We Must Destroy You," 65.

transformed from community concerns to technical ones. Each section in this chapter discusses how the incursion of infrastructure produced spatially differentiated relationships that activists negotiated and made a part of their rhetorical arguments. In conclusion, I return to the discussion of differentiation to understand how space both informs and abstracts political organization.

II: Touring the Future Tense



[5] **Figure 1** – Route map for Expressway Walking Tour Conducted by MAD in 1970. Used with permission of the University of *Baltimore* Special Collections and Archives 1970 (Edited to demonstrate complete route)

In the early winter of 1970, six cars with about 30 passengers divided between them set off on a tour of Baltimore.[6] Organizers working RAM and MAD, including Esther Redd and Mary Rosemond, planned the tour exactingly down to the tenth of a mile. Each road

[5] Expressway Walking Tour 1970-."1970; Movement Against Destruction Records; Series 2, Box 2, Folder 17. University of Baltimore Special Collections and Archives ,5-6.

[6] "Minutes – Part 1: 1970-01-1970-06,"1970; Movement Against Destruction Records; Series 1, Box 1, Folder 7. University of Baltimore Special Collections and Archives, 7.

traveled, exactingly precise; every turn, choreographed and deliberate. This journey took its participants on a tour of a highway not yet built. The drivers wove through Baltimore streets and neighborhoods with the intent of "observing the proposed route (the 3-A plan) of the East-West Expressway."[7] The audience for this tour featured members of Movement Against Destruction (MAD), and two representatives from the Environmental Division of the Department of Transportation (DOT), Mr. Calvin Banks and Mr. Taylor.[8]

The tour began at the offices of RAM located at 520 N. Munroe in west Baltimore.[9] From there the participants drove 5.1 miles northeast to the spot where the proposed expressway was to join with I-70. There the highway plans proposed that the road bisect Leakin Park, a long established green space in the city. The tour stopped twice in the park. The first stop took passengers to the point where the proposed road would intersect with the parkland, paving over dense trees and fauna. The group then traveled deeper into the park until they met the iron eagle statues framing the gated entrance of the historic Crimea Estate, built by railroad magnate Thomas Winans in 1856.[10] After exploring the estate and viewing its noted mansion, Orianda House, the group traveled south-east passing through the adjoining park space of Gwynns Falls.

---

[7] "Expressway Walking Tour 1970", 2.

[8] These participants were from the Federal Department of Transportation, a state equivalent department or position was not yet created.

[9] "Minutes – Part 1: 1970-01-1970-06,"1970, 5.

[10] "Friends of Orianda House." Friends of Orianda House. Accessesed 12 April 2018. http://www.friendsoforiandahouse.com/index.html

Leakin Park and Gwynn Falls found support from environmentalists, preservationists, as well as other local advocacy coalitions. Interestingly, many of the groups concerned with preserving this urban parkland, including Volunteers Opposing Leakin Park Expressway (VOLPE), the Windsor Hill Improvement District, and the Sierra Club never officially joined MAD. Although some participants of these groups joined MAD as individual members. VOLPE, whose name directly evokes the Secretary of Transportation from 1969-1973 – John A. Volpe, sought to stop the road from paving through the historic and old growth forest that the two parks contained. In a position paper written by VOLPE, they argue that this parkland contains rare ecological features not only for an urban environment, but for park land in general. Activists utilized this uniqueness as a rhetorical device to justify the preservation of the space.

> Much of Leakin Park is virgin forest, of what naturalists call 'demonstration quality'. It is mature and self replenishing with groves of trees over 200 years old. This sort of forest is rare anywhere on the east coast; within the boundaries of a major city, it is unique, There is no other city park like it anywhere.[11]

Both the Sierra Club and VOLPE sought to preserved this area and feared that building a highway would have detrimental environmental impacts through air, noise, and water

---

[11] "Volunteers Opposing Leakin Park Expressway, Inc.(V.O.L.P.E.), 1972-1973" 1972-1973; Movement Against Destruction Records; Series 1, Box 1. Folder 94. University of Baltimore Special Collections and Archives, 6.

pollution.[12] VOLPE made use of data from a commissioned environmental impact statement to substantiate these claims. Preventing adverse environmental effects while also preserving urban green space stood as the primary motivator for these groups in stopping road development through the parks. The Sierra Club in particular did not fully support activities that prevented the road entirely, instead they supported a plan that circumvented park, adding 5 miles to the proposed route.[13]

The next stop of the tour brought participants to Bloomingdale Oval in the neighborhood of Rosemont. Volunteers from MAD created an information sheet handed out to tour participants that described the community areas featured on the tour that the highway stood to eliminate. Describing Rosemont, they stress its 'stability' as a neighborhood. "The level of home ownership is approximately 72% as compared to 55% for the city… The houses are almost entirely two-storied row houses, situated on an attractive site of tree lined streets."[14] Despite this success of individual homeownership, Bloomingdale Oval is the only recreation space available to the local community.

Two years prior, in summer of 1967, the city issued condemnation ordinances on houses and other buildings in Rosemont that fell under the proposed route of the highway. These orders threatened the stability of the community, as understood through rates of homeownership. Additionally the plan would eliminate Bloomington Oval, thus creating a neighborhood lacking in any designated public space for community residents. Residents of Rosemont organized through communal resistance to these measures, and consistently

---

[12] "Sierra Club, 1970-1971," 1970-1971; Movement Against Destruction Records; Series 2, Box 1. Folder 83. University of Baltimore Special Collections and Archives, 3.

[13] Ibid, 4.

[14] "Expressway Walking Tour 1970-," 7.

advocated for the mayor and city council to lift the condemnation orders. The group collected statistics of house ownership following condemnation to demonstrate that close to 50% of the houses were still owned by residents, with over 100 additional people on waiting lists for public housing.[15] Most pressingly, organizers argued that placing the route through Rosemont was a deliberate attempt to fracture or destroy the historically black middle-class community of the neighborhood. This point was glaring in that the route bypassed a nearby cemetery. In a public statement from 1969, the group writes;

> Why is the mayor bypassing democratic processes by ignoring City Council ordinance #1072 which would have lifted condemnation from the Rosemont area. The city's inability to condemn a cemetery is not sufficient reason to go back throught (*sic*) Rosemont when the need for any such spur has never been established.[16]

Before leaving Rosemont, the caravan moved south to a stop to look at Rosedale Rd. From this vantage point the participants could see Bloomingdale Oval to the north and the interchange for state road 40 to the east. To the south sat the cemetery, completing a visual tableau of the landscape activists from MAD used blunt language to describe. The current highway policy makers cared more about preserving dead white bodies than they did about preserving the lives and homes of the black citizens in Rosemont.

---

[15] "Rosemont." 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 32. University of Baltimore Special Collections and Archives, 9.

[16] Ibid, 3.

The cars then traveled south to the rows of condemned houses along the Franklin-Mulberry Corridor. It is from this neighborhood that RAM emerged just a few years prior to this tour. The condemned properties served as a visual reminder of the temporal legacy, tracing back to the 1940's, to build a road through this area. The caravan participants made four stop within a span of less than a mile. The multitude of stops suggests that organizers wanted to impress upon the tour group the magnitude of destruction wrought upon this area. The driving notes for the trip emphasize that passengers pay attention to the impacts of the condemnation lines. Houses along the corridor sat boarded up and the city owned properties stood frozen in a state of blighted disrepair. While the houses ostensibly stood condemned in order to make way for a road, the city failed to actually develop the site. The tour stopped for a lunch on Monroe Street before continuing on their journey. Of these homes the organizers wrote, "This neighborhood is now blighted. Vacant buildings attract disease and crime. They have deleted tax from the city tax base. Residents in the neighborhood are presently discouraged and have no pride in their neighborhood."[17]

Stop 10, Hollins Street, brought the caravan south down Freemont Boulevard to a recently constructed school in a predominantly Lithuanian neighborhood. As opposed to the previous points of reference on this journey, the Lithuanian community does not refer to a particular neighborhood, but rather an ethnic concentration within the city space. While this community did not form an organization specifically to stop the road the Lithuanian Hall Association, St. Peter the Apostle Church, and the Hollins Street-Lombard Street Group were all founding member groups of MAD. All three organizations list their

[17] Ibid, 9.

addresses on Hollins Street.[18,19] This stop showcased recent investment in the area; "rich in uniqueness, schools of Law and Dental, clinics and churches, and boasting of a brand new school, the community desires to see money used for its improvement and better living."[20] In general, the advocacy that emerged from this particular geography was concerned with the preservation of the cultural community.

In February of 1969, MAD ran an expressway conference "to "sound out" neighborhood and community opinion concerning the effects of the proposed plan… It was intended that this "citizen input" would open up possible new directions and channels for communication for the Movement Against Destruction." During the conference, representatives from this 'zone' spoke about the concerns specific to this area. Among these issues was a concern for the aging nature of this Lithuanian community, who "desire to remain in their community." The presenters emphasized that the preservation of ethnic identity was justification enough to argue against expressway implementation. Furthermore, "of home/property owners, 80% are senior citizens; any requirement for them to move would be an extreme hardship."[21] Nearly a year later when the expressway tour took place, organizers argued that building a road through this community would detract from the cultural "uniqueness" of this particular city space. They also reported that residents did not want the road through their community.

---

[18] "Memberships," 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 17. University of Baltimore Special Collections and Archives, 2.

[19] "Expressway Walking Tour 1970-", 4.

[20] Ibid, 8.

[21] "Minutes- Part 1: 1969-01-1969-06," 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 6. University of Baltimore Special Collections and Archives, 20-21.

Continuing further south and towards the end of the tour, the group arrives in South Baltimore. Similarly to the Lithuanians, the 'South Baltimore Housing Community' does not correspond to a specific municipality. Rather this group represents the interests of the residents of Sharp – Leden – and Hall Streets. This group would prefer to not have a road, but "if there must be an expressway, it must be kept to the west of Sharp Street… With the shortage of inner-city housing, there is no excuse for destroying this long established community."[22] In earlier meetings, representatives from these neighborhoods, recognizing a need to connect southern Baltimore to the central business district across the Patapsco River, suggested a possible alternative to an expressway. They favored instead a boulevard system. This roadway would not limit access in the way that an expressway would, allowing local traffic to easily enter and exit the roadway.[23]

On the day of the tour in January, the group traveled about 32 miles, weaving around the proposed route and observing the wide impact the expressway stood to have on communities, houses, parkland, schools, and recreation areas. It also emphasized through the tour materials and designated stops the ways that highway planning threatened the city. The four stops in Harlem Park demonstrated that activists saw the road proposals as a serious threat to the stability, vitality, and character of other neighborhoods. In the minutes taken from the MAD meeting that followed on February 2nd, the organizers reported back, "the two gentleman [officials from the DOT] were impressed by the informed and thorough way in which the tour was conducted."[24] Although the officials stated they did not have the

---

[22] " Expressway Walking Tour 1970-.," 8.

[23] "Minutes – Part 1: 1969-01-1969-06," 21.

[24] "Minutes – Part 1: 1970-01-1970-06," 7.

power to stop the road, or even modify it, they promised that the recommendations made by MAD would make their way to the desk of John Volpe, the Secretary of Transportation at the time.[25] This tour, which took place relatively early in the institutional history of MAD, offers a portrait of the form, tenor, and tactics the group made use of in their seven year battle against the road.

The trip organizers took participants on a tour that cut through neighborhoods and cultural enclaves; each one spatially discrete entities with particular claims of ownership and belonging to the urban environment. MAD provided handouts that described the position of each area of the tour, emphasizing on the disparate interests and demands of community members. Additionally, even though the path was determined by the route suggested by the 3-A plan, the spatial account constructed by the activists challenged the dominant planning narrative put forth by the engineers, planners, and policy officials responsible for the route. MAD presented a heterogeneous urban web of people and spaces. Each of the represented areas was presented in a way to demonstrate the vitality of the community or resources within it.

The urban wilderness of Leakin Park and Gwynn Falls, the 'stability' of Rosemont, the 'uniqueness' of the Lithuanian community, and the 'established' housing in the Sharp – Leden – Hall streets all framed the blighted and neglected Franklin-Mulberry Corridor. This section, right in the epicenter of the tour provided a marker of distinction as if to say 'Look at what has already been done in the name of the highway. Look at what has been wrought on this area. Let us prevent this from metastasizing to the north and south'. MAD did effectively create a coalition of community groups, but this organization was predicated on

[25] "Expressway Walking Tour 1970-," 2.

clear and distinct spatial differences. This amounted to a politics of fragmentation through collective organization. Member groups advocated for their geographic, social, or cultural space, and this was kept discrete from the concerns of other organizations. The unifying project of group was therefore not entirely to stop the road, but rather to effectively build a coalition where the spatial difference could guide political claims in relationship to the emergent infrastructure.

III: A Movement (Against Destruction) Emerges

Although the exact time line for the formation of MAD remains ambiguous, the group first started regularly taking and preserving meeting minutes in the summer of 1968. By 1970 MAD membership rolls reflect 26 paying member organizations and 23 individual members, who were aptly titled Citizens Against Destruction.[26] Members paid dues, were invited to attend weekly meetings, and participated in civic activism across the city. The organization also allowed potential members to donate in-kind services in lieu of payment to accommodate those unable to pay the dues. Member organizations came from throughout Baltimore. Some groups were neighborhood or housing associations, others were non-profit organizations that worked in the community, a few groups such as Southeast Council Against the Road (SCAR), were formed with the explicit purpose of resisting highway construction within the city. The later group of organizations grew over the years of MAD's incorporation to include The Society for the Preservation of Federal Hill

[26] "Membership-Member Organizations, 1970-1975," 1970; Movement Against Destruction Records; Series 1, Box 1, Folder 20. University of Baltimore Special Collections and Archives, 9.

and Fells Point (The Society) and Volunteers Opposing Leakin Park Expressway. Each group occupied a spatial domain, each one with its own priorities and perspectives. The formation and trajectory of MAD serves as a novel case in these struggles because unlike many other resistance efforts that formed across the country, their membership was composed of a diverse population of community groups that spanned race, gender, geographic origin, and socioeconomic status.

The early organizational efforts by MAD demonstrate a clear desire to craft an organizational politic that fostered citywide participation while considering smaller scale desires for a place within the city. One place this is apparent is in the original bylaws of the group. First written in 1969, the bylaws state that:

> The Movement Against Destruction is a coalition of organizations and individuals whose purpose is to promote citizen participation in comprehensive planning for implementation of transportation in the Baltimore metropolitan area which is responsive to citizens' desires to preserve and enhance their environment.[27]

Two elements of this mission statement are worth highlighting. Firstly, MAD, at least in terms of their bylaws was not officially configured as an organization against road building. Indeed, it wasn't until much later in their history that the group became adamantly against the road. Rather, its founders and members felt as if the citizens of Baltimore had been left

[27] "Bylaws, 1969."Movement Against Destruction Records; Series 1, Box 1, Folder 2; University of Baltimore Special Collections and Archives (1969), 2.

out of the decision-making processes at the level of the state and city government. Therefore, they wanted to promote and create opportunities for constituents to participate in the processes guarded by engineers, city officials, and other gatekeepers. Secondly, the early formation of MAD advocated for 'comprehensive' transportation planning. This meant that members advocated for wider reaching solutions such as an improved housing stock, rapid transit options, and joint development opportunities. Thus, early efforts made by the group attempted to resolve structural political problems (greater participation, comprehensive planning). The highway worked as a spatial boundary object between different communities. Although the impacts of the potential road were felt differently throughout the city, the emergent material potentiality of the highway on a specific environment, be it a neighborhood community organization, a park, or a public space, foregrounded political action and organization.

Minutes of the group's initial meetings demonstrate that these commitments guided their early initiatives and actions. In a meeting on October 14th, 1968, Art Cohen, an early president of the group, outlined the concept of citizen participation. Cohen advocates for this position as a way for MAD to intervene within the planning process to better represent the viewpoint of those who live in the city. He suggests that any planning that involves the citizenry involves four components – Space (project scope), Numbers (representation of residents), Subject Matter (effects of project), and Time (ability to see project through from conception to completion).[28] This vision for planning is a comprehensive one, but even at this early juncture in the group's history, there was hesitation to support or fully endorse

[28] "Minutes 1968," 1968, Movement Against Destruction Records; Series 1, Box 1. Folder 5. University of Baltimore Special Collections and Archives, 18-19.

this method of intervention. Group members argued that since the planning of highways had already been completed, it was past the point where citizen participation could be considered effective.[29] The tension between building opportunities for participation on one hand, and on the other responding swiftly to the political reality on the ground, serves as a potent undercurrent in the politics of the organization in its early years. Would the group advocate for better alliances and planning efforts for participating groups or would MAD oppose the highway outright? How would participation be impacted if the group embraced a more polemical approach? How could this group speak effectively for such a wide range of participants?

Moving into 1969, group conversation featured fewer instances of how its members might organize to change the proposed routing of the highway. Instead, meetings often emphasized the efforts of individual member groups or debates on building group consensus on what elements of highway proposals should be resisted. Within this transition, there is a sense that MAD was beginning to consider tactics that worked less to "preserve and enhance" but rather to make areas resilient against future planning initiatives. This shift originates from the city's continuing effort to condemn house in preparation for highway construction. For instance, in January of 1969 the group met to debate an alternate routing 3-A plan. This route "save(s) Leakin Park, reduces noise and pollution for existing neighborhoods." In reply it was asked:

> 'Why are we as a coalition going into such specific detail on expressway routes. We are not highway planners'. The response was that such specific

[29] Ibid, 19.

> "investigations" were a deliberate tactic to raise and sharpen the issues. To speak out too late on Plan 3-A would dissipate any weight MAD might have in challenging the "accepted" thinking of the day.[30]

Debates over how to incorporate expertise and technical knowledge into advocacy efforts also demonstrates how organizational tactics imagined a different future urban geography. Similarly, in later meetings, participants "raised the question of how MAD can obtain technical engineering data to bolster some of our own positions."[31] There is a clear shift in tone here from the original mission statement. The group moved from developing mechanisms for better planning, and citizen participation into tactics that challenged the planners directly using their own language and calculations. With this movement in language towards a politics of expertise, the geographic space of the city also became abstracted.

This observation mirrors the work of Theodore Porter. He writes in his work *Trust in Numbers*, "quantification is well suited for communication that goes beyond the boundaries of locality and community."[32] Porter argues that numbers act as a "technology of distance," in that they provide a communicative means of objectifying knowledge in a form that can travel across space.[33] Thus, it should not come as a surprise that as MAD

---

[30] "Minutes- Part 1: 1969-01-1969-06," 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 6. University of Baltimore Special Collections and Archives, 7.

[31] Ibid, 66.

[32] Theodore M Porter. Trust in Numbers: The Pursuit of Objectivity in Science and in Public Life (Princeton: Princeton University Press, 1995), ix.

needed to incorporate a larger set of voices and perspectives, organizers began to utilize and challenge the language provided by the engineers, planners, and the broader 'road gang'. Additionally, Penny Harvey and Hannah Knox emphasize the need to attune to social and cultural practices of differentiation in relationship to infrastructure. They write,

> The material presence of infrastructure… lead to the integration and differentiation of modern national territories and populations. Also of crucial significance are the expert practices, such as techniques of measurement, mapping, and description that help shape processes of social transformation.[34]

The pair draw attention to spots of resistance in achieving a project of cultural and spatial integration.[35] They observe that road building projects often lead their informants to ask questions about their future in relationship to the transformed space. Similarly, as was the case with RAM, the representational space of the emergent highway encouraged residents to organize in relation to a future temporality and spatiality. This imagining served as the canvas for which to structure organizational and institutional demands.

Yet, there is another process that runs alongside efforts towards constructing differentiated space. As the MAD coalition formed, the group began to make use of a discourse of professional expertise when crafting arguments against the road. As

---

[33] Ibid, 15.

[34] Harvey and Knox, *Roads: An Anthropology of Infrastructure,* 6.

[35] Ibid, 62.

participants utilized the language of planners, engineers, and policy professions, activists abstracted the spatial environment itself. By drawing attention to the erroneous projections or calculations made by planners, activists distanced themselves from arguments that emerged from local geographies. Harvey and Knox also draw attention to the role of expertise within social decision-making processes and engagement within large technical projects.[36] Through their analysis, the building of roads, and to a larger extent infrastructure, always produces struggle and informs the positions of different parties as they stake out specific (and differentiated) claims to the transformed environment.

The infrastructural understanding of urban space as conceived by these professionals was already in circulation in the public sphere. Latching on to this contested, but established understandings of space proved a potent tool for MAD to challenge. Yet, the potency of this political tactic does not totally explain how challenging expertise became a part of the MAD arsenal. To understand this, we must turn back to 1967 and the creation of the Urban Design Concept Team.

IV: An Interdisciplinary Approach

The exact status and role of Urban Design Concept Team (UDCT, also sometimes referred to as 'Urban Design Concept Associates') remains a point of some debate for scholars interested in highway building in Baltimore. Created in 1967 through a joint venture between the State Roads Commission and four independent firms, The UDCT merged designers and architects with engineers and other technical experts. The firm Skidmore, Owings & Merrill (SOM) served as the principal of "development under the

[36] Ibid, 11.

design criteria phase," while J.E. Greiner Company served at the principal for the "study design phase."[37] The other firms worked in support of the two principal leads.. In total, the UDCT "ultimately cost $66 million (in 2012 dollars)."[38] The UDCT was created in the context of rising dissatisfaction with the city's handling of highway planning following a series of well attended and controversial public hearings regarding the 10-D plan. Furthermore, the placement of condemnation lines in Rosemont on June 26, 1967 related to the 10-D plan, caused a massive outcry from the predominantly middle-class black residents.[39]

The UDCT attempted a collaborative effort between engineers, architects, urban planners, sociologists, and government officials and was the first major attempt by a city to address comprehensive highway planning. The scope of the contract for work states that, "The Interstate System in Baltimore must function as an efficient transportation facility, *as well as meet the social, economic and aesthetic needs of the City's environment"* (ital. by author).[40]The UDCT was plagued by infighting amongst the groups, chiefly SOM and J.E. Greiner. The Greiner engineering firm was responsible for the creation of the controversial 10-D plan, from which the UDCT team was not originally permitted to veer. SOM's inability to propose new routings of the system was a contractual obligation of their participation in

---

[37] "Urban Design Concept Team - Part 1: 1967-09-09-," 1967; Movement Against Destruction Records; Series 7, Box 8. Folder 1. University of Baltimore Special Collections and Archives, 5.

[38] Wong, "Architects and Planners," 180.

[39] "Rosemont Public Hearings - Rescind Condemnation Ordinance, 1973-06-21" 21 June 1973; Movement Against Destruction Records; Series 6: Box 6. Folder 56. University of Baltimore Special Collections and Archives, 2.

[40] Ibid, 11.

the group. Despite this, SOM architects, planners, and sociologists often publically spoke out against the route and the top down approach taken by the engineers at Greiner. Additionally, this group involved the community as they studied the highway and its potential impacts. SOM even established a community information office in the heart of Franklin-Mulberry Corridor.[41] In a 1969 newsletter, the firm emphasized expressed community needs for recreation space, as well as the resources available through the office. "FEEL FREE TO COME IN AND REVIEW WHAT OTHERS HAVE DONE AND ADD TO THE IDEAS." (caps. in the original).[42] The office provided a space where residents could learn about the proposals, gain technical knowledge of the routes, and speak with SOM team members. As Sydney Wong argues in his history of UDCT, SOM's research and emphasis on public access served as the "rich reservoir of knowledge for the anti-road groups to put to full use."[43]

One major point of contention within the UDCT was the 10-D route itself. As per the scope of their original contract, UDCT members were unable to study, propose, or develop new routes that could meet their social mission. So for the first two years of their work, employees of SOM proposed joint development and interim use plans. Interm use proposals would have created plans for community spaces within the condemnation lines before construction began. Joint development would create green, recreation, or other

---

[41] "Urban Design Concept Associates- Franklin/Mulberry Corridor," 1969; Movement Against Destruction Records; Series 2, Box 7, Folder 125. University of Baltimore Special Collections and Archives, 7.

[42] Ibid, 2.

[43] Wong, "Architects and Planners,"187.

community spaces alongside highway development.[44] In 1969, a new contract was negotiated that allowed the team to study and propose new routes – one of these was the 3-A plan that MAD eventually followed on their 'highway tour'.[45]

It is difficult, if not impossible, to determine the precise relationship between efforts by SOM to inform the public and the initial formation of MAD. Some scholars, like Wong above, point to activist testimony from the Rosemont hearings to suggest SOM coached and encouraged community participants.[46] The argument that resistance was crafted and organized by an external stakeholder group, seem unlikely in totality. The routing selections faced public outcry well before the creation of the UDCT. Indeed, resources were directed towards the formation of the UDCT in an attempt to temper growing unrest in the city. Yet, two documents from the MAD archive do suggest that SOM team members had an influential hand in the formation, or at the very least, the organizing philosophy of MAD.

Writing in a chapter in *The American Aesthetic,* a book published in 1969, Nathanial Owings, a partner at SOM, describes a history of planning within Baltimore. In this book, he describes the creation of the UDCT, its larger mission, and the uniqueness of its multidisciplinary formation. As he explicates of his larger design philosophy for urban spaces and highways he writes, "it is becoming more and more important in our transportation planning that additional attention be given not only to the preservation and enhancement of existing open space, but also to the providing of additional open space in

---

[44] "Urban Design Concept Associates- Franklin/Mulberry Corridor," 2.

[45] Ibid, 4.

[46] Ibid, 190.

anticipation of future development."[47] Looking back to the MAD mission statement, we see that the phrase 'preservation and enhancement' serves as a core element of the group's mission. This demonstrates that the utilization of professional discourse was formative in the conceptualization of the MAD and its larger political mission.

Yet, a secondary document buried in a collection of archival documents from RAM also suggests that SOM served as more than just a community center. This document, from May of 1968, written by June Ross, a staff member at SOM, proposes a "structure for citizen participation."[48, 49] This three-page document describes how SOM and the larger UDCT should involve the community. The proposed organizational structure bears many similarities to the form that MAD eventually took. For instance, she writes that

> The initial thrust of the Proposed Community Participation Program of the Urban Design Concept Team should focus primarily on the communities most directly involved in the highway program. While directing initial efforts to the concerns and resources of these communities directly involved in the UCDA program by virtue of their geographic location, the Community Participation Program will take cognizance of interests groups and

---

[47]" Nathanial A. Owings, "The Rebirth of A Queen." The American Aesthetic, 1969," 1969; Movement Against Destruction Records; Series 7, Box 7, Folder 100. University of Baltimore Special Collections and Archives, 4.

[48] Wong, "Architects and Planners," 199.

[49] "Relocation Action Movement (RAM)," 26.

individuals whose interests and concerns relate to the areas in which the UCDA program has potential impacts.[50]

She goes on to describe this program as one that brings community groups together to work within regionally specific groups that could address the local concerns of different routes, relocation options for homes and businesses, interim planning opportunities, improvement initiatives, or alternative transportation options.[51] The specificity of this document, and the way that those details align with the eventual structure and operations of MAD seems more than a coincidence. Although there is no direct evidence to suggest that MAD began as an outreach effort of the UDCT, this document does point to how SOM had a hand in the how MAD structured their mission, organization, and larger political operations.

Evidence suggests that the sharing of expertise by professionals working as a part of the UDCT was formative in the creation of MAD. More so, once the design team released their route alternatives the 3-A, 3-B, and 3-C plan, the public refutations of this plan by MAD spoke within the technical language of the planners themselves. MAD's testimony at the Rosemont hearings, the public forum that discussed these new routing plans, reflects a growing technical sophistication. During these hearings, MAD submitted 14 pages of testimony challenging the routes, the veracity of the figures used in these determining these highways, as well as the inadequacy (and possible illegality) of the public hearings that preceded earlier condemnations. The first technical challenge made by MAD in this

---

[50] Ibid, 26.

[51] Ibid, 27.

venue argued that the traffic figures utilized in these alternatives were from the 10-D plan and had not been "recalibrated" for the new routes. The testimony states:

> These traffic figures do not represent any type of peak hour impact and are not correlated with the transit traffic figures implied by the inclusion of traffic projections in the study. Also these figures were supposedly calibrated assuming that both the rapid rail transit and road would be built, so we do not know what traffic flow would result if only the road were built or vice versa.[52]

This demonstration of technical knowledge is quoted as coming directly from staffers at the UDCT. MAD also submitted as an exhibit in their testimony an internal S.O.M memo that discussed the tensions between the firm and the J.E. Greiner Company. While these tensions were not unknown to the public at the time, an article in *Architectural Forum* in March of 1969 titled 'How S.O.M. Took on the Baltimore Road Gang" discusses a highly adversarial relationship between the two firms, the use of an internal document as evidence again demonstrates a strong relationship between MAD and SOM.[53]

These arguments lead to accusations in *The Sun* of collusion between the team and the activists. One member of MAD is quoted as saying "We've been prompted by the best in

---

[52] "Rosemont Public Hearings - Rescind Condemnation Ordinance, 1973-06-21" 21 June 1973; Movement Against Destruction Records; Series 6: Box 6. Folder 56. University of Baltimore Special Collections and Archives, 6.

[53] "Baltimore Association of Commerce - Bailey, James. "How S.O.M. Took on the Baltimore Road Gang" - Architectural Forum, 1969-03," March 1969; Movement Against Destruction Records; Series VII, Box 7. Folder 25; University of Baltimore Special Collections and Archives.

the business… These young engineers come around at night to describe the bad points of the expressway and then we go to their bosses the next day."[54] A second article published two weeks later quotes Joseph Axelrod, chief of the Interstate Division of Maryland, as accusing the design team of using their resources to "support the enemy." The enemy he is referring to here is MAD and other activists positioned against the road. Axelrod goes on to say "It's kind of disturbing to be in the site office and find anti-expressway flyers in the literature rack."[55] These articles make clear that the professionals at S.O.M. utilized their position and expertise to facilitate the organization and activities of MAD while also providing evidence that would raise doubts about the motives and professional objectivity of the road builders and engineers.

This transition to arguments against expertise and engineering decision making demonstrates one of the major tactics activists utilized to unite disparate local arguments into a larger urban and infrastructural space. More so, moving to more 'global' arguments, ones that captured the whole of the road, rather than a discrete section, united the group despite the many disparate perspectives held by MAD member groups. The language of technical expertise allowed arguments to travel over distances in ways that the hyper-local priorities of RAM or the want for generalized community participation by MAD could never quite accomplish.

Transitioning institutional arguments did not come without controversy. Although the details of the confrontation are unclear, at a MAD meeting in June of 1969, a

---

[54] Keidel, Janelee. "An expressway bridges a gulf between people." Page 2. Section K. *The Sun* (1837-1989) (17 August 1969).

[55] Keidel, Janelee "Ulterior Designs Hinted in Urban Design Offices." Page 6. Section C. *The Sun* (1837-1989) (27 August 1969).

representative of RAM expressed concerns about the relationship between the two groups. This representative, a Mrs. E. Redd, made a plea for,

> The need for clearer channels of communication within MAD and between member groups… Representatives of member groups must make it their responsibility to understand and keep informed on the actions and positions which MAD might take as a whole and communicate these to their groups.[56]

This meeting took place around the same time that RAM advocated for fair replacement value for their homes in the Franklin-Mulberry Corridor. The plea for communication and better collective understandings of the positions of member groups by Redd, suggests that the use of technical expertise may have also worked to further distance and differentiate groups from each other. Think back here to the tour discussed earlier in this chapter, during this event the organizers stated, "the Franklin-Mulberry corridor has long been recognized for a natural for the construction of an express."[57] This description of a naturalized geographic selection for highway planners coupled with the how the tour positioned the corridor as a threat of what could soon befall other areas, demonstrates that certain spatial differences persisted throughout this fight against the highway. Indeed, even as claims began to evoke the specifications and language of planners, the fracturing of the urban environment and the neighborhoods within it remained stable. This instance suggests that paying attention to the relationship between groups, geography, and scale of

---

[56] Minutes- Part 1: 1969-01-1969-06., 72.

[57] Expressway Walking Tour, 8.

intervention offers one mechanism towards considering how infrastructural futures are conceived, negotiated, and resisted.

V: Differentiation, Distance, and Spatial Organization

This chapter began with a discussion of differentiation as presented by Harvey and Knox. Broadly, they argue that although large-scale infrastructure projects are often conceived of as technological systems that integrate spaces, groups and ideas, it is helpful attune to how this systemic integration is produced by cultural differentiation. The above discussion and analysis of MAD, its activities, debates, and member groups has suggested that differentiation has a spatial correlate. Social organizations both interact with the spatial environment as it is simultaneously shaped by existing geographic formations.

The systemic degradation of the Franklin-Mulberry corridor is one example of socio-spatial differentiation. The Harlem Park neighborhood was the first area of the city to face condemnation orders to prepare for highway development. The previous chapter demonstrated how highway proposals dating to the 1940's understood this area as one to be transformed, rather than one occupied by houses, businesses, and residents. Activism by RAM challenged this presumption by asserting a civic ownership of the space. Yet, as this chapter demonstrated, this same geographic environment was used by MAD as a physical actualization of the fate that would befall communities who were threatened by interstate development. Without this visual marker of the impacts of condemnation, lowered housing values, and the public disinvestment that defined the corridor, activists from MAD would not have been able to so forcefully argue that the highway threatened the surrounding urban communities. In some ways, their position mirrored the ethos of planners such as

Robert Moses who pathologized slum environments as threats to the surrounding city. The spatial divides of Baltimore both helped to develop the organizational priorities of MAD while simultaneously abstracting spaces from their lived reality.

The abstraction of urban space by activists was not a goal from the outset, nor was it an intentional action. Indeed, the early organizational history of MAD demonstrates real attempts to build and develop practices community participation and praxis. Yet, as the group began to work with and utilize the expertise of planners and professionals from the UDCT, MAD began to use technical data to counter their opponents in the public sphere. These arguments worked as techniques of distance that spoke to the failings of the larger integrated infrastructural landscape, rather than the priorities of specific geographic regions. One consequence of 'scaling-up' arguments meant that the road was considered as a priori in its impacts, a reversal from earlier arguments that either resisted the road or suggested solutions where communities could remain in the city alongside the emergent system.

MAD organized, not through an integration of perspectives, but rather through differentiation. This process demonstrates a spatial correlate – that is coalition building not only takes place across different and intersecting geographic spheres, they emerge out of these formations as well. Simply, coalition building emerges through the social production of social space. More importantly, this spatial correlate suggests infrastructural imaginaries as work in the crafting of alternative visions for spatially grounded socio-technical futures. Looking toward how the groups who joined MAD articulated and constructed a politics of grounded in a specific spatial sphere offers one method of observing this activity. Thus, space operates in sociotechnical controversies as a sometimes-contradictory element –

flexible to divergent interpretations of individual or collective positionality. Spatial and geographic characteristics can act as a powerful shaper of organizational priorities, yet it can also be abstracted and appropriated for other purposes. Indeed, debates emerging from spatial configuration point to a potent area for understanding the emergence, negotiation, and production of socio-spatial difference. The next chapter returns to this relationship to examine how the duel processes of differentiation and abstraction traveled beyond local priorities as MAD and other anti-highway groups sought to stop the highway through the juridical sphere.

Chapter Five – Legislating the Highway

I. A Suit to Stop this Road

As MAD entered the 1970's, the group continued to attend hearings, create pamphlets, send out mailing campaigns, and meeting weekly to discuss highway activism taking place across multiple geographies in the city. In addition to continuing normal activities, in 1972, the group solicited the help of a lawyer to file an injunction against the entire 3-A plan. The decision to file suit followed a legal victory by a local chapter of the Sierra Club, in which the judge ruled that the design hearings for the proposed segments of the road through Leakin Park did not meet new federal guidelines regarding the required content of public hearings. Bolstered by this local success and other concurrent victories or temporary injunctions against highway building on a national scale, MAD turned to its members to raise funds in support of an ambitious lawsuit. As Carolyn Tyson, MAD president at the time, writes in a solicitation letter to supporters, "No lawsuit has ever stopped a road; some suits have delayed roads, or rerouted them… We plan to design this suit to stop the road."[1]

MAD's suit made two arguments. Firstly, the group argued that the design hearings for the Franklin-Mulberry segment of the proposed highway did not meet federal guidelines. Additionally, MAD questioned the entire 3-A system needed to be studied and approved as a complete entity under regulations put in place by National Environmental Protection Act of 1969 (NEPA). This second goal worked explicitly towards MAD's goal of

[1] "Minutes, 1972," 1972; Movement Against Destruction Records; Series 1, Box 1, Folder 9. University of Baltimore Special Collections and Archives, 29.

stopping the entire highway in Baltimore in one fell swoop rather than through individual rulings against discrete segments of the system.

When the case was eventually argued and decided upon in the US District Court for the District of Maryland in 1973, MAD, and its codefendants, Sierra Club, et al. and Elanor Marie Lukowski et al. were handed a devastating loss on all counts. The court ruled that no laws or statutes were broken during the hearings prior to the condemnation of the Franklin-Mulberry Corridor. Additionally, the court ruled that the 3-A system could not be challenged in court "as a whole."[2] This decision led the city to pick up the pace in building the segment of road that eventually came to be known as the 'highway to nowhere'. Despite this loss, the outcome did not appear preordained to the defendants at the time of their legal battles. Records from MAD meeting minutes, as well as lawyer correspondence, demonstrate a real optimism that the group would accomplish a unique legal feat in the emerging body of case law surrounding interstate route selection and administrative review of federally supported highway projects. The group was not foolish for their optimism. As the legal challenges to federal highways made their way to the courts, many case outcomes proved successful for activists, including, most notably, *Citizens to Preserve Overton Park v. Volpe*, argued in front of the Supreme Court in 1971. Additional decisions in Alexandria, VA and the Hudson Valley in New York State made victory against highway building through court intervention appear an achievable feat.

The previous chapters examined the relationship between highway proposals and activism across multiple and competing spheres. Chapter two argued for increased emphasis on spatial examination within the analytic concept of socio-technical imaginaries.

---

[2] Movement Against Destruction v. Volpe, 361 F. Supp. 1360 (D. Md. 1973).

Broadly I framed this conceptualization as infrastructural imaginaries to account for how planning futures appropriate and abstract environmental landscapes into material representations. Chapter three introduced an analysis utilizing Lefebve's conceptual triad of spatial practice to understand how activists within Baltimore in the 1960's responded to the technical abstraction of urban space by planners and politicians to craft a politics that reflected their inhabitance, use, and position within the city. Chapter four moved scales to examine activist formations across larger geographies within the city. There I emphasized the emergent practices of spatial and social differentiation as MAD came to speak for a wider geographic body of social interests. This final chapter ties these multiple threads together to examine local and national legal interventions against highway building by MAD and other groups. Even as arguments traveled, social articulations of the meaning, purpose, and uses of spaces come to the forefront of struggles around highway infrastructure.

Critical to this discussion is understanding the relationship between abstraction, differentiation, and infrastructural imaginaries. An earlier discussion of the 1944 planning document *Interregional Highways*, evoked Lefebvre's concept of abstract space to describe how the interactive processes of homogenization, fragmentation, and hierarchization come to constitute the representational figures and projections for future transformed space. Lefebvre's description and subsequent critique of abstract space emphasizes its violence and repressive 'essence'. He writes;

> A classical (Cartesian) rationality thus appears to underpin various spatial distinctions and divisions. Zoning, for example, which is responsible —

> precisely — for fragmentation, break-up and separation under the umbrella of a bureaucratically decreed unity, is conflated with the rational capacity to discriminate. The assignment of functions, and the way functions are actually distributed 'on the ground', becomes indistinguishable from the kind of analytical activity that discerns differences. What is being covered up here is a moral and political order.[3]

Lefebvre's critique emerges out of a concern for how abstract space antagonizes the bodily relationship to differential space – "a space generative of difference and creativity."[4] He argues that the production of difference is an innate process of the body. The logic of abstract space, its repetition and homogenizing tendencies, alienate the body from its labor of differentiation.[5] Thus, Lefebvre also posits a mode of praxis, whereby, as summarized by Chris Butler, "attempts to transform abstract spatial relations must proceed through a massive intervention of personal and collective uses of space which challenge the universalizing pressures of exchange value and sovereign power."[6] Simply, to confront and modify assertions of abstract space requires bodily intervention by participants to assert their counterhegemonic uses, desires, and creativity within space. Much of the analysis in Chapter 3 demonstrates how RAM worked within such a modality to argue for an alternate, and thereby differentiated, form of urban life.

---

[3] Lefebvre, *The Production of Space*, 317.

[4] Derek McCormack, "Geography and abstraction: Toward an affirmative critique." *Progress In Human Geography* 36, no. 6 (December 2012), 718.

[5] Lefebvre, *The Production of Space*, 395-396.

[6] Butler, "Abstraction Beyond a Law of Thought," 258.

Yet, in analyzing the techniques and work of MAD differentiation practices amongst socio-spatial organization could produce forms of abstraction through attempts to 'scale up' arguments across geographic space. In this situation abstraction becomes a product of attempts to demonstrate alternative visions for the future of Baltimore. Thus, some have argued that a generalized critique or reproach of abstraction fails to fully account for the fluidity and interrelation of the two processes. Michael McCormack suggests that "abstraction is a constituent element of the background infrastructures that allow life to show up and register as experience. Seen in this way, abstraction is an irreducible part of the ontogenetic character of the worlds we inhabit."[7] He points to work in the field of Science and Technology Studies that has proved particularly fruitful in demonstrating how abstraction binds different and apparently contradictory processes together, particularly through interactions with material or technological objects. McCormack provides a series of recommendations towards an 'affirmative critique' of abstraction that can account for the dynamics, rhythms, and relationships that constitute the relationships between abstraction and differentiation. He writes that "this critique is motivated by the necessity of explaining how abstraction works as a participant in the process by which materialisms come to matter, rather than explaining away abstraction in order to get at the real materiality of concrete experience."[8]

In support of engaging in this form of affirmative critique, I suggest that utilizing the analytic of infrastructural imaginaries can work towards understanding how practices of socio-spatial abstraction and differentiation come to constitute the creative process in

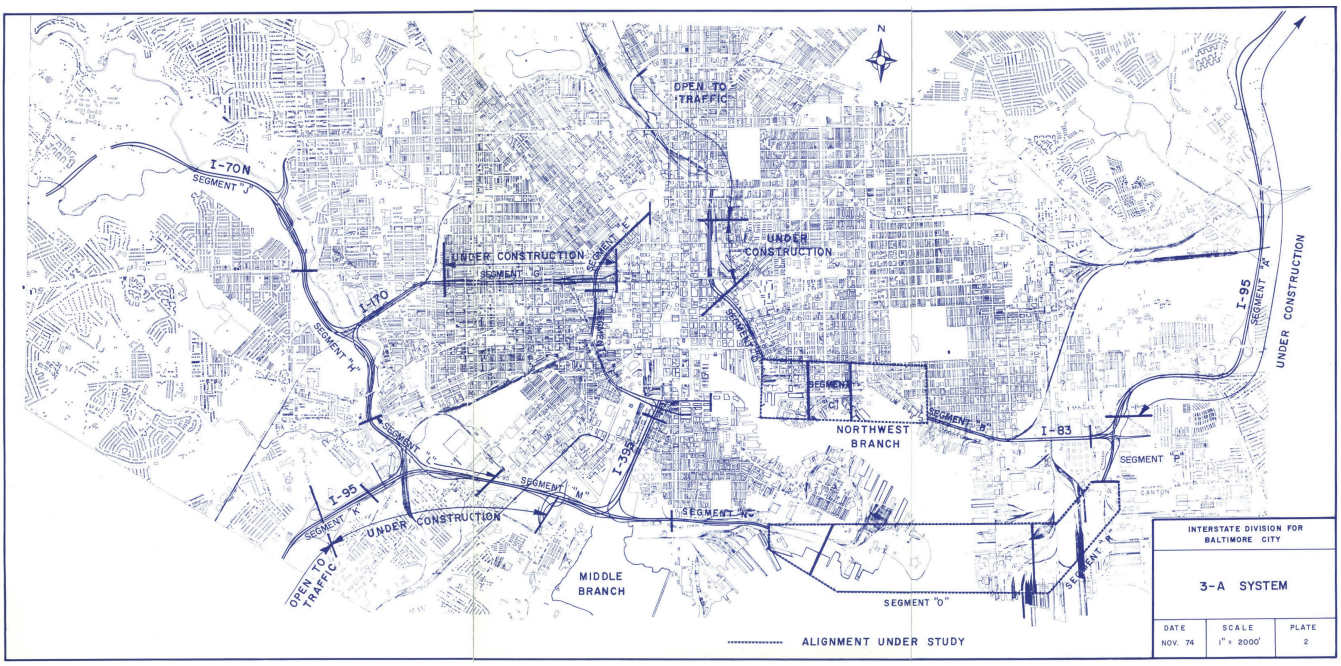
---

[7] McCormack, Geography and Abstraction, 720.

[8] Ibid, 727.

developing suggestions towards alternative material futures. In chapter two I introduced infrastructural imaginaries as an extension to the analytic socio-technical imaginaries, developed by Jasanoff and Kim. Here concept is further developed in relationship to MAD's attempt to stop the road through legal intervention. Although it might appear counterintuitive to examine an infrastructural imaginary demanding that a technological system should not be implemented, looking at the future proposed by MAD can help to elucidate McCormack's affirmative critique towards understanding the "process by which materialisms come to matter." Furthermore, in examining legal cases against highway building, both from MAD and other groups nationwide, the dominant practices of spatial abstraction on a wider scale come into the forefront of the analysis. This helps to contextualize how the lawsuit brought by MAD responded to these practices, but also, why this suit ultimately failed.

II. Segments, Piecemealing, and Federal Processes of Abstraction



[9] **Figure 2 -** Complete 3-A plan for Highway in Baltimore demonstrates the spatial segmentation of the road. Segments required individual approval, meaning work on discrete road segments could begin prior to the complete approval of the whole system. Used with permission of the University of Baltimore Special Collections and Archives.

The late 1960's brought a few major changes to federal policy that aimed to address growing national concerns raised by highway activists. The first major change resulted from an amendment to the 1966 Federal Aid Highway Act that dissuaded planners from building roads through federal parkland. The second change took place at the administrative level within Federal Highway Administration (FHA). There Alan Boyd, the first secretary of the United States Department of Transportation (DOT) amended the Policy and Procedures Memorandum (PPM) of the administration "requiring two public hearings on interstate routes - one on highway corridor location, and a second on more

[9] "Environmental Impact Study - City Boulevard Ring - Draft - Russell Street to Battery Avenue and From I-395 to Ostend Street, 1974-11," 1974; Movement Against Destruction Records; Series 4, Box 4, Folder 1. (MAD) University of Baltimore Special Collections and Archives, 31-33.

specific design issues."[10] The new requirement for two separate hearings coincided with the 1969 National Environmental Protection Act (NEPA) which stated that any major Federal action required an environmental impact statement (EIS) that evaluated the,

> (i) environmental impact of the proposed action
>
> (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented
>
> (iii) alternatives to proposed action
>
> (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity
>
> (v) and any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.[11]

Highway projects utilizing federal money were bound by the new NEPA regulations. These intertwined policy changes - parkland preservation, mandatory public hearings, and required comprehensive environmental impact statements, served as fertile ground for legal interventions by activists to challenge specific routing decisions of interstate highway projects.

Yet, environmental impact statements and design hearings also produced a secondary and perhaps unintended consequence. To effectively administer the roadbuilding process, the DOT supported highway plans that spatially segmented and

---

[10] Rose and Mohl, *Interstate: Highway Politics*, 144-145.

[11] National Environmental Policy Act of 1969, 42 USC § 4321 (1969).

fractured the highway building process. The parceling of road sections is evident in the above image (Figure 2) of the complete 3-A system. The map, originates from a 1974 draft environmental impact statement for section 4(f) of the system. Planners hoped that this route would become a part of the I-395 corridor through the city. By dividing the 3-A route into discrete segments, planners followed federal guidelines encouraging the practice. The PPM 90-1, app E (Aug. 24, 1971) defines a highway section as "a substantial length of highway between logical termini."[12] By dividing roads in this way, environmental and design review was confined to a specific geographic area. The language within the PPM does not require a given length or technical specifications for classifying a highway section, rather it suggests a general rule of thumb for determining the scope of a road segment. Due to this policy, work could begin on individual road segments prior to the approval of other sections within the system.

This process, many argued, piecemealed highway systems, creating a path dependency whereby route selection became obligatory rather than subject to amendment or review through the hearing process. Additionally, the federal requirements of NEPA and the Interstate Highway Act regarding environmental review and the preservation of parkland only applied to highways built with federal money. Because highway plans were divided into segments, some of these segments proved less controversial than others and faced easy review processes. Activists in Baltimore and elsewhere expressed concerns that construction could begin on individual segments, thus sinking money into a projected route and make segment selections less malleable within the review process. Additional fears emerged that in the case of particularly contested segments, the state could reject federal

[12] Movement Against Destruction v. Volpe, 361 F. Supp. 1360 (D. Md. 1973).

funding and fund the remainder of building costs independently, thus avoiding compliance with federal regulations.

In a 1974 review of lawsuits against the Federal Highway system Rosenberg and Olson discuss how claims against 'piecemealing' were understood both federally, and by litigants. They write that the PPM cautioned against a piecemealing approach although the document also conceded that highways should be considered as 'sections' rather than large-scale 'projects'.[13]

> The highway section included in an environmental statement should be as long as practicable to permit consideration of environmental matters on a broad scope. Peacemealing [sic] proposed highway improvements in separate environmental statements should be avoided. If possible, the highway section should be of substantial length that would normally be included in a multi-year highway improvement program.[14]

Thus, the interpretation of the procedure to determine the difference between 'section' and 'piecemealing' was left up to planners. More so, because guidelines for segmentation did not include technical or quantifiable definitions of a segment, activists and lawyers struggled to demonstrate intent to construct a system through piecemealing. As the above

---

[13] Ronald H Rosenberg. and Olson, Allen H., "The Federal-Aid Highway Construction Process: Procedures, Cases, and Plaintiff Strategies" (1974), Faculty Publications. Paper 660. 1237.

[14] Ibid, 1234 (see footnote in essay).

map demonstrates, the 3-A plan contained over a dozen sections, each required to undertake its own EIS for eventual use in a public hearing.

One attempt to build a highway through this process took place in San Antonio, TX. in 1970. In this case the Secretary of Transportation, John Volpe, granted federal permission to build two sections of a highway without also approving the middle segment that bisected the Brakenridge-Olmos Parklands.[15] The San Antonio Conservation Society eventually brought suit in order to get an injunction against the state highway department, Texas Highway. Although the Supreme Court vacated the stay of construction from the district courts, the lower court of appeals eventually ruled that "the Secretary of Transportation should not have divided the project into three segments to be considered separately, nor should he have released funds for the end segments without having first conducted a detailed study of the project as a whole."[16]

Activists in Baltimore watched the San Antonio case as it moved slowly through the courts, fearing that a similar situation could easily occur in their city. Lawyers working for some Baltimore litigants also followed the San Antonio case closely, hoping that an injunction would strengthen their case. In the proceedings for a case where litigants from The Society and the Sierra Club challenged the section of the 3-A plan through Fells Point (Segment C in Figure 2), the lawyer for Elanor Marie Lukowski et. al. referenced San Antonio directly. In proceedings he states, "The state receives money for planning of these expressways, it receives money for the construction of the expressways, each to a certain

---

[15] John W. Giorgio, "Parklands and Federally Funded Highway Projects: The Impact of Conservation Society v. Texas," 1 B.C. Envtl. Aff. L. Rev. 882 (1972), 882.

[16] Ibid, 883.

point. In a so called pincers movement, the highway was built through the park on each side and there the highway stopped, leaving the park land gap in the center."[17] He continues, "whether state defendants, by exiting from the case at the proper moment, can take advantage of federal funds which are being given to them to build right up to controversial segments… segments that are protected by federal law, and then drop out of the case and at a later time violate those segments."[18] Lawyers for the defendants argued that the San Antonio case demonstrated the viability of this tactic and pleaded for a mechanism to protect Baltimore from a similar situation. While a piecemealing approach to highway implementation was a valid concern, it did not prove a particularly successful legal argument when brought to the courts. The administrative mandate for dividing routing plans into discrete sections from the Federal Highway Administration created a very opaque boundary between route segmentation and piecemealing. Only one case, *Conservation Society v. Secretary of Transportation*, proved successful in arguing that routing decisions required full system approval. In this case, which concerned an interstate route through Vermont, the District Court explicitly engaged with the question of whether the EIS for a segment of a road fulfilled the federal mandate. In this case the court ruled that an EIS was required for the whole route. Thus, "meaningful evaluation of environmental consequences becomes moot since the failure to build the proposed segment would render the previously constructed roadway inefficient or useless."[19] Here the court approached the

---

[17] "Eleanor Marie Lukowski, et al vs. John A. Volpe - Transcript of Proceedings," 21 Jan 1972; Southeast Council Against the Road (SCAR) Records; Box 2, Folder 62; University of Baltimore Special Collections and Archives, 56 (53).

[18] Ibid, 59 (56).

[19] Rosenberg and Olson, 1237.

piecemealing question by determining that segments of highway required the existence of the larger route to function properly, therefore the intertwined segments needed to be considered as a whole.

The dividing of highway routes into discrete, stand-alone sections, evokes the earlier mentioned conception of abstract space by Lefebvre. Segmentation, a similar process to zoning, parcels up space to make it manageable through the logic of the state, in this case by intertwined federal mandates and procedures. Yet, within this organization of space, not only are differences ignored, the intertwined and systemic features that constitute the whole of the system fall into the periphery. While the subdivision of space produces spatial abstraction, this physical organization also has the potential to disrupt the emergent material form. Thus, while piecemealing points to a political machination of state planners to subvert regulations or force contested segments through a perceived path dependency, it also reveals the fragility of infrastructure constructed through this mechanism. A productive tension lies at the heart of this contradiction that points to the "processes by which materialism comes to matter." In this case the abstraction of infrastructural space is co-produced through the ways in which actors can organize themselves against the proposed materiality. In this sense, abstract space aided in the production of differentiation practices that MAD drew from in their eventual lawsuit where they developed an infrastructural imaginary against the dominant and homogenizing tendencies of the state practices.

Michael Warner's conceptualization of counterpublic proves instructive within this discussion to consider how civic participants respond to abstractions by the state. He

writes, "Counterpublics are spaces of circulation in which it is hoped that the poesis of scene making will be transformative, not replicative merely."[20] Counterpublics embrace a discourse of difference that emphasizes a way to see outside of dominant, universal claims. Actors within them can literally bring forth new ways of being, knowing, and understanding – allowing them to impose these claims onto a larger sphere. Davis Hess also utilizes the term counterpublics to frame debates surrounding the public understanding of science (PUS). Hess's conceptualization proposes "a complementary project of exploring knowledge claims anchored in the subordinate positions of various social fields and the linkages among such claims."[21] Warner and Hess differ in the suggested orientation of the concept – Warner speaks to subaltern challenges to political power while Hess examines how scientifically oriented knowledge claims move within competing scales of expertise. The highway building process required that different segments of space respond to highway plans in different ways, thus generating new ways of responding and conceptualizing space itself. One way this emerged was through the legal protection of parkland.

III. Prioritizing Park Space

Citizens to Preserve Overton Park v. Volpe, argued at the Supreme Court in January 11, 1971 and decided in March of the same year, marks the first major national victory against the interstate highway project. Much like many other contested highway sections,

---

[20] Warner, *Publics and Counterpublics*, 122.

[21] David Hess, "To tell the truth: on scientific counterpublics." *Public Understanding of Science,* 20, no. 5 (September 2011), 630.

the route of issue in this court case planned to bisect a park space. This case explicitly sought to clarify whether the Secretary of Transportation, John Volpe, violated the amended Federal Aid Highway Act of 1966 which decreed that no route shall be built through park land if “feasible and prudent" alternative route exist by approving the Overton Park route.[22] To this day, this decision remains impactful for its interpretation of the relationship between judicial review and administrative action. In addition to these decisions, the case also reaffirmed the congressional decree and granted parkland elevated status in highway planning processes. This newly defined status, which protected and privileged parkland, opened up new avenues for environmentalists and lawyers working to preserve park space in the face of increased development. Additionally, this status also produced a hierarchy of spatial values within urban environments. This policy change would in turn fracture civic activism against highways by protecting of some forms of landscapes over others. The production of differential space through juridical decision-making deserves further examination because of how these decisions would come to unevenly influence the claims to space that could be made by activists as they turned to the courts.

Prior to the amended 1966 Act, parkland did not have a federally protected status in interstate routing decisions. State or regional bodies of government possessed a great deal of autonomy in routing choices. Those who planned highways needed to contend with multiple, interconnected variables such as residential displacement, condemnation, or the efficacy and efficiency of the route. Parkland or other green spaces emerge within this paradigm as an easy choice for routing selections. The relative ease of building a highway through a park, as opposed to a dense residential area, caused many planners to place

[22] Citizens to Preserve Overton Park v. Volpe, (1971).

proposed highways through these spaces as a cost saving measure. Facing pressure from environmental activists, congress amended the Federal Aid Highway Act of 1966 to limit this practice. The *Overton Park* case presented the first major test of this new law, and its decision further clarified the congressional intent of the amendment. Writing in the decision for *Overton Park*, Justice Thurgood Marshall argues that this amendment not only protects parkland, it grants these spaces special status in the eyes of the law. He writes;

> There will always be a smaller outlay required from the public purse when parkland is used since the public already owns the land and there will be no need to pay for right-of-way. And since people do not live or work in parks, if a highway is built on parkland no one will have to leave his home or give up his business. Such factors are common to substantially all highway construction. Thus, if Congress intended these factors to be on an equal footing with preservation of parkland there would have been no need for the statutes.[23]

In amending the highway act to protect these spaces, congress stipulated that parks must be considered, as per the law, differently than other possible spaces for the implementation of a highway. Therefore, because the "protection of parkland was to be given paramount importance"[24], the onus on demonstrating that no "prudent or feasible" alternative routes to a park route were possible fell to the Secretary. While environmental or preservationist

---

[23] Citizens to Preserve Overton Park v. Volpe, 1971.

[24] Ibid.

leaning groups celebrated this decision, the special status of parkland inadvertently lowered the comparative value of residential plots within the administrative decision making process.

The dissenting opinion of *San Antonio Conservation Society v. Texas Highway,* which concerned the park in San Antonio addressed in the preceding section, suggested a similar environmental bend. This case, argued a year prior to *Overton Park,* sought the continuance of a stay preventing federal approval of the two highway spurs leading in to the park. The court dissolved the stay and sent the case back to the lower courts. Yet, Justice Black, in response to the suit submitted an impassioned dissent that would echo into to the eventual *Overton Park* decision. The dissent emphasizes the value of parkland, and the potential for great disruption when the highway arrives. He writes;

> It is a refuge for young and old alike-the kind of a park where a family man can take his wife and children or lovers can while away a sunny Sunday afternoon together. After today's decision, the people of San Antonio and the birds and animals that make their home in the park will share their quiet retreat with an ugly, smelly stream of traffic pouring down a super six- lane 'North Expressway.' Trees, shrubs, and flowers will be mown down. The cars will spew forth air and noise pollution contaminating those acres not buried under concrete. Mothers will grow anxious and desert the park lest their children be crushed beneath the massive wheels of interstate trucks.[25]

[25] San Antonio Conservation Soc. v. Texas Highway, (1970).

Although the dissent veers towards hyperbole, Black's emphasis here gives life and vitality to the special status of parks that the court would affirm in just a year. His prose aims to segregate the park space from the perceived hardships of urbanity and encroaching modernity. The ability and potential for a park to provide respite, protect animal life, and provide spaces for social experience ought to be protected both to uphold federal regulation (NEPA) and for a greater moral, if more ambiguous, purpose. Both *San Antonio Conservation Society* and *Overton Park* mark the beginnings of a new era for highway building. Yet, for the purposes of this chapter, the decision in *Overton Park* also points to the productive tension between abstract space and spatial differentiation. In many ways, the decision further perpetuated the fractured nature of abstract space, yet, it also represented a victory for an alternate view of space that demanded that parkland be treated differently and therefore offered additional legal protections. Thus, it demonstrated the generative relationship between the two concepts.

Despite the resounding federal victory of national highway activists, the decision in *Overton Park* did not provoke much conversation amongst MAD. Meeting minutes from MAD (as well as other affiliated groups) do not suggest that the decision factored heavily into either the group activities or subsequent discussions. Yet, in June of 1971, MAD reported that the Sierra Club was gathering local support to create the group eventually called VOLPE."[26] Incorporating a special interest group at the local level, as opposed to the national level, allowed the group to serve as "plaintiffs in possible litigation." The group hoped to challenge the I-70 route through Leakin Park and Gwynn Falls. The minutes read, "The basic legal issue involved in the Leakin Park segment relates both to environmental

[26] "Minutes, 1971," 21.

considerations and procedural aspects of the public hearings… The resolution of some or all of these issues could have substantial impact on other aspects of the expressway, but that it was necessary for a variety of reasons to focus the legal issue on one segment for the time being."[27] Unedited notes from the meeting suggest that MAD members brought up the questions of whether a suit against the whole 3-A system could be taken to the courts. A handwritten note in the meeting minutes reads, "the Sierra Club cannot support a suit against the whole system," but the writer does not provide any additional detail or comment.[28]

VOLPE quickly filed incorporation papers the next month and began preparing litigation. The case brought by VOLPE, et al. explicitly discusses whether the plaintiffs met the "individualized injury test," a test for demonstrating whether an organization or their members are "adversely affected" by "any of the activities or actions being challenged."[29] This test was previously determined in another Sierra Club suit which preferred litigants directly impacted by changes made to parkland- this included people who lived nearby, made use of the park, or a group with a mission to preserve the threatened parkland. The Sierra Club created potential plaintiffs, and thus a social organization predicated on legal conceptions of geographic sociality, who could meet the standards of the newly established

---

[27] Ibid, 21.

[28] Ibid, 19.

[29] "Miscellaneous Court Cases - Ward, Thomas vs. Ackroyd, Richard - #71-930-M & Sierra Club, Inc. vs. Volpe, John A. #71-1118-M, 1972-06-08," 1972; Movement Against Destruction Records; Series 4, Box 2, Folder 45. University of Baltimore Special Collections and Archives, 12-13.

tests for standing.[30] The creation of VOLPE speaks to how the new practices of spatial differentiation also, in turn produced new forms of social differentiation. Without the decision in *Overton Park* that privileged parkland, the practices and specific activist orientation of VOLPE would not have been possible. While Baltimore had no shortage or organized highway activism, in order to make environmental preservationist claims in the courtroom, a new organization was required in order to serve as a voice to this newly protected form of space.

This formative impulse does not lessen or take away from the work that VOLPE undertook. The group met, published pamphlets, solicited money, and advocated at public hearings. More so, just like MAD, their organization emerged from processes of abstraction that in turn offer new spaces from which to generate social action. The creation of MAD, as discussed in the previous chapter, emerged out of a general concern about the impacts of highway development with different geographies across the city. This social collective emerged out of the representations of space put forth by highway planners in Baltimore. MAD, with the help of expertise from the UDCT, created a form of praxis that countered this understanding. The same rings true for the work of RAM in their crafting of a representational space where impacted residents within the Franklin-Mulberry corridor could continue to live in the city following the construction of a roadway. For all of these groups spatial abstractions productively generated new and distinctive infrastructural imaginaries.

The eventual lawsuit brought by VOLPE and its co-litigants challenged whether the prior hearings held on the I-70 segments followed the proper federal guidelines for design

[30] Ibid, 12.

hearings. Lawyers in this case focused on the content of hearings and whether alternative route selections faced fair public scrutiny. Following the decision by the Judge, the Leakin Park segment was ordered to repeat public hearings so that officials relayed the federally required information. While their legal arguments focused on procedural conformity, the position statement issued by VOLPE demonstrated a deep knowledge of the new federal guidelines for highway construction in parkland. Their position statement reads:

> Leakin and Gwynn Falls Parks are public assets far too valuable to be desecrated by an expressway unless:
>
> A: The need for the road falls in the category of serious and immediate emergency; and
>
> B: There are no feasible and prudent alternatives; and
>
> C: All possible planning has been done to minimize harm to the parks.
>
> None of these conditions have been met.[31]

Similar to the way that MAD's usage of technical data and professional jargon allowed the group to speak across competing scales of knowledge and expertise, VOLPE's usage and knowledge of federal regulations became their organizational impulse and larger activist orientation.

Unfortunately, the laws that worked in the favor of VOLPE did not have the same impact for MAD. While VOLPE formed specifically to conform to the standards of new and

[31] "Affiliate Organizations - Community Volunteers Opposing Leakin Park Expressway, Inc. (V.O.L.P.E.)", 2 (3).

emerging environmental law, the eventual suit filed by MAD demonstrates an impulse counter to this orientation. Despite a federal policy that approved, understood, and built roads in segments, MAD crafted a lawsuit that demanded nothing less than stopping the 3-A plan in its entirety. While this would prove its downfall, the MAD lawsuit also demonstrates a clear alterity and articulation of creative and generative social differentiation. Their vision for an alternative future for Baltimore, one absent of a highway, patterned the infrastructural imaginary put forth by the group as they planned and presented their legal case.

IV. MAD et al. v. Volpe

MAD announced its intention to file a lawsuit to organization members in a letter dated August 23, 1972. In this letter MAD president Carolyn Tyson explained the group's reasoning behind these actions. The group felt buoyed by the decision in the VOLPE/Sierra Club case where the court determined that the hearings for the Leakin Park expressway did not meet federal standards and thus required city officials to hold the hearings again with proper notice and specific design plans. MAD members felt that this victory could potentially be repeated by applying the same argument towards hearings held for the Franklin-Mulberry corridor section.[32] Tyson writes,

> M-A-D is hiring an attorney to prepare a suit chiefly on environmental grounds. Other factors, including illegal location hearings and, possibly, illegal relocation procedures, would be included. We came to this conclusion to

[32] Minutes 1972, 29.

> expand the scope of action both because of the recent increased momentum in the expressway program… and because we feel we have fairly well exhausted other recourses open to us. But principally we now have both new laws and court decisions to rely on.

Members approved the action at the following meeting in September of that year and selected plaintiffs through October. Member groups from MAD voted individually in deciding whether they wanted to serve as plaintiffs in the case. In total, plaintiffs represented a citywide geographic swath of the city and included individual representatives of Franklin-Mulberry, Rosemont, and South Baltimore. Member groups who joined the suit included MAD, the South East Community Organization (SECO), Caton Improvement District, and the Windsor Hill Community Association.[33,34] Around this time, MAD also officially filed Articles of Incorporation in order to be considered a nonprofit organization for the purposes of this case.[35] To prepare a suit on "environmental grounds," the lawsuit argued that an EIS for the entire system was required before beginning construction to meet NEPA standards. The group thought this strategy wise as other concurrent lawsuits also took a similar approach.

Early movement in the lawsuit offered optimism to both MAD lawyer John Armor, as well as to the plaintiffs in the case. Armor reported that after filing, he was contacted by

---

[33] Ibid, 35, 38.

[34] "John C. Armor, Esquire - Correspondence - General, 1972-1977," 1972-1977; Movement Against Destruction Records; Series 4, Box 2, Folder 22. University of Baltimore Special Collections and Archives, 2.

[35] Ibid, 38.

regional council for the DOT to discuss a possible settlement. Armor, in a progress report to MAD, writes "the recent and serious inquiries about settlement from both the Department of Transportation and the Justice Department indicate that the government believes it may lose on major points in our suit. This bodes well either for settlement on agreed terms, or for success in the court."[36] This early optimism never materialized into an actual settlement and neither correspondence nor meeting minutes indicate why or how this communication died out. In early 1973, MAD lawyer John Armor met with Judge Miller, the lawyer assigned to the case, as well Judge Thompson, who was assigned another lawsuit emerging from Fells Point. The Judges declared "a partial class action on only those issues that would invalidate the entire 3-A system."[37] While each of the individual litigants would have a separate judgment towards the legality of the hearings on the section of road each suit challenged, the class could hear judgments on the following questions:

> 1) Must there be an Environmental Impact Statement on the entire 3-A system, followed by a hearing on the entire System?
>
> 2) Must such an impact statements have to be prepared by federal, rather than state, officials?
>
> 3) Does the impact statement for Franklin-Mulberry adequately cover alternatives to the proposed expressway, particularly rapid transit?

---

[36] "MAD, et. al. vs. John Volpe, et. al. - Progress Reports, 1972-1975," 1972-1975; Movement Against Destruction Records; Series 4, Box 2, Folder 28. University of Baltimore Special Collections and Archives, 3.

[37] John C. Armor, Correspondence- General, 8.

4) Must the Franklin-Mulberry statements be prepared by federal, rather than state officials?

5) Was the original hearing in 1962 on Franklin-Mulberry inadequate, for its failure to consider certain issues?[38]

These questions differ slightly from ones Armor brought to the judges when meeting regarding the class declaration. His original questions focused more on the administrative review and decision-making processes for the entire 3-A system. It appears that after this meeting it was determined that only two questions could focus on system wide, rather than section bound questions. This, perhaps, marks the first time that Armor's enthusiasm for the success of the case began to temper.

In the complaint filed to the court, it becomes clear that Armor's approach to this suit required the scaling up of previously successful legal tactics in fighting highway construction. Despite the system wide approach embraced by MAD, Armor needed to rely on the successful victories within established case law on the adequacy of hearings and environmental impact statements. To challenge the entire 3-A system, he pointed to the procedural inadequacies and potential non-compliance with federal policy made by the City of Baltimore. He writes "There was no public hearing of any kind concerning the 3-A system between the Mayor's decision 24 December 1968, and the decision by the Bureau of Public Roads in January, 1969… Given the history of the 3-A System, all "corridor public hearings"… have violated the requirement… that they be held "before the route location is

[38] Ibid, 9.

approved and before State highway department is committed to a specific proposal."[39] Essentially, the suit contends that general plans, including specific route selections, were approved prior to conducting federally required hearings on corridor selection. This timeline of events violated federal policy, thus invalidating the entire 3-A system.

Additionally, the plaintiffs argued that NEPA guidelines required that an EIS be created for the entire system and that existing impact statements on specific corridors contained inadequacies that rendered these studies invalid.[40] As relief, the plaintiffs requested that defendants cease construction, "included but not limited to condemnation, purchase, and demolition of property, signing of contracts for design or construction, holding hearings without the required Environmental Impact Statements… or the seeking or granting of any federal approvals of any segment of the 3-A section."[41] This complaint combined the successful elements from *Overton Park* which pertained to whether state actors violated federal policy, while also questioning the validity of public hearings and environmental impact statements, which was successful in granting the injunction against construction in Leakin Park.

Judge Miller and Thomsen, dashing the hopes of MAD, John Armor, and the class of plaintiffs, ruled against the suit on all counts. Their decision, which includes an extremely comprehensive chronology of highway planning in Baltimore, essentially contends that there is no precedent or regulation that states a highway system must be considered as a

---

[39] "MAD, et. al. vs. John Volpe, et. al. - Original Complaint, 1972-10-10," 1972; Movement Against Destruction Records; Series 4, Box 2, Folder 29. Movement Against Destruction (MAD) University of Baltimore Special Collections and Archives, 13 (11).

[40] Ibid, 13-16 (11-14).

[41] Ibid, 20 (22).

whole. Additionally, Miller and Thompson ruled that the hearings and EIS for the Franklin-Mulberry corridor were adequate. This decision enabled the long awaited construction on the I-40 route through the Franklin-Mulberry corridor to move forward. Much of the judicial opinion discusses whether a proposed network of roads has any requirement to be considered in relationship to each other. Miller and Thompson write their opinion:

> It is appropriate for some purposes to place each highway in the context of the total transportation function which it is to achieve, an examination which requires a broad look at the entire Interstate System in the area, as well as other highways, but this does not mean that any such system itself is the unit of approval. In short, the statutory scheme of the Federal-Aid Highway Act, and the administrative policies adopted thereunder, contemplate each individual Federal-aid highway as the unit of federal consideration and action and not the network of highways which ultimately will result from the approval and construction of the respective units.[42]

The judges conceded that in the future planners may need to consider the wider impact of highway sections in relation to the larger system. They write, "it will not be sufficient in the future to consider the environmental impact of certain segments or sections of such highways as I-95, I-70N and I-83 entirely apart from other segments of those roads or from the entire configuration known as the 3-A system."[43] Yet, this determination is not bound to

---

[42] Movement Against Destruction v. Volpe, 361 F. Supp. 1360 (D. Md. 1973).

the current procedures put forth by the Federal Highway Administration nor NEPA regulations.

The court case brought by MAD, and the subsequent judicial decision, make clear that despite national concerns about piecemealing or segment approval, the practices adhered to both law and procedure. MAD's intervention aimed to challenge these practices by asserting an infrastructural imaginary grounded in the production of differentiated space. MAD's confronted the seemly arbitrary organizations space made by planners and attempted to reconfigure the city space as an ecological whole, a dynamic and interconnected landscape of environments, neighborhoods, and residents. The group's institutional identity sought to represent the whole of citizens impacted by highway building in Baltimore. The geographic scope of this inclusivity cut across the parcels and planning scales that highway builders and administrators worked within. Even though MAD's intervention proved unsuccessful, the lawsuit demonstrates how the processes of abstraction and differentiation can come to coalesce and become productive of alternative infrastructural imaginaries that challenge material futures proffered by the state. This imaginary countered the dominant practices of highway construction and instead asserted the holistic and system-wide impacts of the proposed highway system for the city. This formation was predicated on overall social-spatial impacts, rather than discrete environmental or segmented review processes. This imaginary did not align with the legal or procedural understanding of the proposed abstracted space. In this assemblage of conflicting scales, it is necessary to call attention to how the proposed and segmented infrastructure assumed preexisting socio-spatial formations. This organization of

---

[43] Movement Against Destruction v. Volpe, 361 F. Supp. 1360 (D. Md. 1973).

infrastructural space conflicts with the scale of organization that MAD asserted throughout their history.

V. Abstraction, Differentiation, and the Stopping Highway

Susan Leigh Star famously wrote of infrastructure that it "is by definition invisible, part of the background for other kinds of work."[44] This assertion has faced numerous challenges and refinements over the years, including calls from academics to draw attention to the spaces where infrastructure resides in the forefront of cultural accounts. Brian Larkin in *The Poetics and Politics of Infrastructure* sees the emphasis on invisibility as inherent to infrastructural systems as a difficult claim to maintain. He draws from a body of anthropological accounts to demonstrate that invisibility is a mobilization of certain infrastructural arrangements rather than a characteristic innate to a system.[45]

Larkin suggests studying poetics as they coexist alongside the technical functions of infrastructures. He writes, in the case of infrastructures, the poetic mode means that form is loosened from technical function. Infrastructures are the means by which a state proffers these representations to its citizens and asks them to take those representations as social facts. It creates a politics of "as if."[46] Rather than political, ethical, or social choices needing excavation, this mode of analysis stresses the need to understand how these qualities

---

[44] Star, "The Ethnography of Infrastructure," 380.

[45] Larkin, Brian. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42, no. 1 (2013), 336.

[46] Ibid, 335.

produce active meanings and representations. To add on to these insights, this chapter has discussed how the arrangement and procedures that creates or constructs infrastructure functions as a mechanism of abstraction within socio-spatial formations. This processes in turn co-produces multiple forms of difference to respond to the demands and pressures of the proposed infrastructure. Additionally, while MAD attempted to make an intervention within the total urban environment that stood opposed to the administrative ordering of space, other groups such as VOLPE formed to capitalize on the concurrent court decisions that favored the preservation of parkland within highway building. These arrangements, which present an interesting counterpoint to each other, suggest that studying the infrastructural imaginaries – that is the alternative conceptions and orderings of socio-spatial life that emerge out of abstraction can uncover the "process by which materialisms come to matter." Infrastructural imaginaries, attuned to the dynamic relationship between abstraction and differentiation, thus can provide an analytic that accounts for meaning, usage, and importantly, organized resistance to dominant modes of spatial production.

Conclusion – Towards Spatially Grounded Infrastructural Futures

Baltimore's Harlem Park, the neighborhood bisected by the 'highway to nowhere', to this day, continues, by many indicators, to be considered a neighborhood in decline. As of 2016, the area reported a household vacancy and abandonment rate of 30%, a steep difference from the citywide 8%. Additionally, the neighborhood continues on as a highly segregated space in the city; 96% of Harlem Park residents are Black/African American and half of households earn under $25,000 annually.[1] Comparatively, the Inner Harbor/Federal Hill Area of Baltimore, which contains Sharp-Leden-Hall Streets (Stop 11 and 12 on the Expressway Walking Touras well as the neighborhood from which the Society to Preserve Federal Hill emerged, has a median income of $94,380. Additionally, over 73% percent of residents in this neighborhood are White/Caucasian and only .5% of the buildings in this area are vacant or abandoned.[2] The stark economic differences in these neighborhoods demonstrate the lasting scars of spatial injustice across the city. The 'highway to nowhere' cannot, nor should it be, considered the cause of these socio-spatial divisions. Baltimore City still reels from a legacy of redlining, housing discrimination, and unconstitutional policing practices.

Yet, the 'highway to nowhere' marks the only segment of the 3-A plan that ended up constructed within the central city of Baltimore. State Route 40 cuts horizontally across the city, but it does not function as an arterial route. The road is littered with stoplights, often

---

[1] "Sandtown-Winchester/Harlem Park" 2016. Baltimore Neighborhood Indicators Alliance. (Accessed 19 July 2018) https://bniajfi.org/community/Sandtown-Winchester_Harlem%20Park/

[2] "Inner Harbor/Federal Hill" 2016. Baltimore Neighborhood Indicators Alliance. (Accessed 19 July 2018) https://bniajfi.org/community/Inner%20Harbor_Federal%20Hill/

resulting in gridlock. This route is a far cry from the dreams of speedy and well-managed traffic imagined by early highway planners. The other connecting segments were never built, exposing the fragility of highways as an interconnected and well-functioning system. I-395 comes in through the south of the city to end abruptly outside of the gates Camden Yards, transitioning into a local route. I-83, the Jones Falls Expressway, approaches from a north connecter of the I-695 Beltway and ends as it approaches Downtown. I-70 reaches a terminus far outside the western edges of the city. Gwynn Falls/Leakin Park sits in front of the incomplete route. Driving through the city of Baltimore takes passengers through maze of interstate, state, and local roads. As a system, the roads lack coherence, and at times adequate paving or correctly timed traffic lights. Despite this mosaic of different road types, this system was actively produced through civic activism, focused community protest, and differentiated social understandings of space. Although the highways of Baltimore City look nothing like other urban road systems, the incomplete and disjointed system form an infrastructure deeply intertwined with past socio-spatial interactions. The abrupt ending of interstates and the fragmentation of its pieces reflect the tenor and tactics of the city activists who fought to prevent highway development.

Throughout this dissertation, I have examined the social and spatial meanings of plans for interstate highways in the United States at different scales. Chapter two examined the work of two planners, one with a utopic vision, and the other with a technocratic one. There I demonstrated how each man inscribed social values into proposed developments within geographic space. These two infrastructural imaginaries shaped how space would be appropriated into a system and rearranged to produce different patterns of use, mobility, and social interaction. Norman Bel Geddes predicted that a future system of super

highways would transform the speed, safety, comfort, and economy of automotive transport. Robert Moses, on the other hand, saw highways as a technology of urban governance that could spark economic renewal and remake blighted areas within the city of Baltimore. Importantly, both planners sought to transform existing space through infrastructural implementation and conflated this change with a coming modernity. This future that understood highways as drivers of social, economic, and technological change often had to be challenged in the future as activist confronted more dire on the ground realities.

Chapter three utilized Lefebvre's conceptual triad of spatial practice, representations of space, and representational space to move to a local scale and analyze the dynamic interactions between infrastructure planning, lived experience, and articulations of possible futures. There I demonstrated how activists in 'freeway revolts' navigated these different meanings to craft arguments that emerged out of their socio-spatial positionality. The 'highway to nowhere' bookended this chapter demonstrating how RAM's geographic position within Harlem Park and Rosemont shaped their political activism and larger goals. Here the discussion of infrastructural imaginaries moved from individual production to those developed by a social collective. The demands made by RAM suggest that Lefebvre's conceptualization of space can both account for place – the meanings held within a given geography, as well as the abstractions of space that take place in the representations of planners and engineers. This relationship generates the bodily collective engagement of those impacted and textures the political demands brought into the public sphere. More so, this chapter demonstrates how the proposal of infrastructure within space itself shaped social demands and political organization. This contrasts to

sociotechnical imaginaries where "desirable futures" are upheld through developments within science and technology. Here the relationship between the social production of space and emergent or proposed technologies shape the content and mechanisms of achieving collective desire able futures.

Chapter four continued deeper into the history of attempted highway construction in Baltimore to demonstrate how citywide activism professing the inclusivity of civic participation also relied on the spatial differentiation of participating organizations. Differentiation amongst groups within MAD often resulted in conflicting goals, objectives, and desired infrastructural outcomes. Thus, infrastructural imaginaries are not homogenous – they consist of spatial heterogeneity that must be negotiated and made legible by participants. This chapter also demonstrated how technical expertise was utilized to bridge the spatial ruptures between groups to challenge the veracity of claims made by planners, engineers, and state officials. This process allowed arguments to travel over greater distances, but also simultaneously abstracted spaces from the lived experience of residents. In many ways this chapter is a lament, a dirge. The limits of infrastructural imaginaries as an organizational or political tool come to the surgace. As abstraction occurs, bodies get left out and left behind.

Chapter five oscillated between local and federal scales to demonstrate how legal and administrative redefinitions of space influenced 'freeway revolts' as activists in Baltimore attempted to stop the highway through lawsuits. These definitions which designated that highways should be constructed through the approval of discrete sections, ultimately clashed with MAD's insistence that the highway be understood, and subsequently approved, as a complete system. Ultimately, MAD's legal intervention

demanded that the law understand the neighborhoods impacted by highway development as interconnected and intertwined. No one area, no segment, could be rendered more important than the others. Participants imagined the city spaces as simultaneously occupied by social and spatial difference, but connected through a shared experience and threat of obsolescence through technological intervention. Ultimately, a confluence of administrative and legal precedents prevented their argument from taking hold. Yet, the argument put forth by MAD and their lawyer demonstrates how the group sought to create and imagine a future where a strong social infrastructure could bind the city to itself.

This dissertation has made the case that work in Science and Technology Studies, particularly its subfield of Infrastructure Studies, should pay closer attention to the social production of space. Ultimately, this argument emerges out of a deep concern for understanding and interpreting the many and multiple meanings of space. As the above chapters demonstrate, understandings, interpretations, and uses of space profoundly impact how social formations organize, respond, and craft modes of political praxis. To leave space outside of analyses of social interaction with technologies glosses over this richness. Lefebvre's larger project in developing his understanding of space was a political one. He writes;

> A revolution that does not produce a new space has not realized its full potential; indeed it has failed in that it has not changed life itself, but has merely changed ideological superstructures, institutions or political apparatuses. A social transformation, to be truly revolutionary in character,

> must manifest a creative capacity in its effects on daily life, on language and on space.[3]

By examining the socio-spatial construction of infrastructures, I also aim at political and transformative ends. Struggles over space take place at all scales of social life, and these struggles point to how our lived environment shapes our other intersectional ways of being. In turning attention to how space is perceived, conceived, and lived – we might better understand not only the history of how certain forms of sociality came to be but also suggest how we might envision them changing.

The analytic of infrastructural imaginaries offers one mechanism of achieving this end. To study large systems requires negotiating the networked and often homogenizing tendency of infrastructure with its relational differences to a variety of social actors or cultural forms. To study the imaginary, the immaterial form, provides a fertile space from which to isolate places where systems fail to take hold, where alternative understanding emerge, and where new forms social interaction takes place. This analysis requires moving in-between scales of analysis to working back and forth between conflicting interactions and meanings. Yet, this perspective also allows for attuning to the relational interactions that take place across space and time. If infrastructures, as Lauren Berlant writes "bind us to a world in movement", they also bind those apart of systems together.[4] In many ways,

---

[3] Lefebvre, *The Production of Space*, 54.

[4] Lauren Berlant. 2016. "The Commons: Infrastructures for Troubling Times*." *Environment and Planning D: Society and Space* 34 (3), 394.

the history of MAD demonstrates an attempt to bind a space together across distance and difference to stop a road and reinvent urban life for its residents. It also suggests that infrastructural imaginaries have material footprints that step across time. The deep racial, social, and economic divides of contemporary Baltimore show that even stopping most of the road failed to achieve this end. Yet, the group also demonstrated that working across socio-spatial practices can work towards political ends that meet diverse needs. In a time when both social and material infrastructures from times past keep rapidly failing, it appears the perfect moment to consider how the social production of space might inform our visions of a new infrastructural future, one more just and equitable than previously assembled.

Bibliography

"Affiliate Organizations - Community Volunteers Opposing Leakin Park Expressway, Inc. (V.O.L.P.E.) - Affiliate Organizations - Position Statement," 1972-1974; Movement Against Destruction Records; Series 1, Box 1, Folder 33; University of Baltimore Special Collections and Archives.

Anderson, Benedict. *Imagined Communities.* Brooklyn, NY: Verso. 2006.

"Baltimore Association of Commerce - Bailey, James. "How S.O.M. Took on the Baltimore Road Gang" - Architectural Forum, 1969-03," March 1969; Movement Against Destruction Records; Series VII, Box 7. Folder 25; University of Baltimore Special Collections and Archives.

Berlant, Lauren. 2016. "The Commons: Infrastructures for Troubling Times*." *Environment and Planning D: Society and Space* 34 (3), 393-419.

Blok, Anders, Moe Nakazora, and Brit Ross Winthereik. "Infrastructuring Environments." *Science as Culture* 25, no. 1 (2016), 3.

Brune, Herbert M., "Analysis of Freeway Proposal," 11 Oct. 1941; Movement Against Destruction Records; Series VII, Box 7A, Folder 1; University of Baltimore Special Collections and Archives.

Butler, Chris. "Abstraction Beyond a 'Law of Thought': On Space, Appropriation and Concrete Abstraction." *Law and Critique* 27, no. 3 (2016), 247-268.

"Bylaws, 1969."Movement Against Destruction Records; Series 1, Box 1, Folder 2; University of Baltimore Special Collections and Archives (1969).

Carse, Ashley. "Nature as Infrastructure: Making and Managing the Panama Canal Watershed." *Social Studies of Science* 42, no. 4 (2012), 539–63.

Citizens to Preserve Overton Park v. Volpe, (1971).

Citizens to Preserve Overton Park. "Citizens to Preserve Overton Park Album."1972; Drawer 3, Folder 19; Memphis and Shelby County Room, Memphis Public Library & Information Center.

Cogdell, Christina. "The Futurama Recontextualized: Norman Bel Geddes's Eugenic 'World of Tomorrow.'" *American Quarterly* 52, no. 2 (2000), 193-245.

"Eleanor Marie Lukowski, et al vs. John A. Volpe - Transcript of Proceedings," 21 Jan 1972; Southeast Council Against the Road (SCAR) Records; Box 2, Folder 62; University of Baltimore Special Collections and Archives.

"Environmental Impact Study - City Boulevard Ring - Draft - Russell Street to Battery Avenue and From I-395 to Ostend Street, 1974-11," 1974; Movement Against Destruction Records; Series 4, Box 4, Folder 1. (MAD) University of Baltimore Special Collections and Archives.

"Expressway Walking Tour 1970-."1970; Movement Against Destruction Records; Series 2, Box 2, Folder 17. University of Baltimore Special Collections and Archives.

"Fair's Theme Song Has Its Premiere" New York Times (1923-Current file), Page 13. (3 February 1940). ProQuest Historical Newspapers.

"Friends of Orianda House" Friends of Orianda House. Accessed 12 April 2018. http://www.friendsoforiandahouse.com/index.html

Gieryn, Thomas F. "A Space for Place in Sociology." *Annual Review of Sociology* 26 (2000), 463–96.

Giguere, Andrew M. "'…and Never the Twain Shall Meet': Baltimore's East-West Expressway and the Construction of the 'Highway to Nowhere,'" Thesis - Ohio University. (2009).

Gioielli, Robert. "'We Must Destroy You to Save You': Highway Construction and the City as a Modern Commons" *Radical History Review* 2011, no. 109 (2011), 62-82.

Giorgio, John W., "Parklands and Federally Funded Highway Projects: The Impact of Conservation Society v. Texas" 1 B.C. Envtl. Aff. L. Rev. 882 (1972), 882-991.

Habermas, Jurgen, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. Cambridge, MA: MIT Press. 1991.

Halsey, Ashley, III. "A Crusade to Defeat the Legacy of Highways Rammed Through Poor Neighborhoods." *The Washington Post*, (March 28, 2016. Accessed October 21, 2017).

Christopher R. Henke and Thomas F. Gieryn. 'Site of Scientific Practice: The Enduring Importance of Place.' *The Handbook of Science and Technology Studies*. Ed E. Hackett, O. Amsterdamska, M. Lynch, J. Wajcman. Cambridge, MA: MIT Press. 2008, Third Edition.

Hess, David. "To tell the truth: on scientific counterpublics." *Public Understanding of Science,* 20, no. 5 (Sep. 2011), 627-641.

Highways and Horizons Exhibit Brochure, Personal Collection.

Harvey, David. *Rebel Cities: From the Right to the City to the Urban Revolution*. New York, NY: Verso, 2012.

Harvey, Penny; Knox, Hannah. *Roads: An Anthropology of Infrastructure and Expertise (Expertise: Cultures and Technologies of Knowledge)* Ithaca: Cornell University Press, 2015.

Hughes, Thomas. "Technological Momentum." *Does Technology Drive History? The Dilemma of Technological Determinism* Cambridge, MA: MIT University Press, 1994, 101-113.

Hughes, Thomas. "The Evolution of Large Technological Systems." *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* Cambridge, MA: MIT Press, 1987, 51-82.

"Inner Harbor/Federal Hill" 2016. Baltimore Neighborhood Indicators Alliance. (Accessed 19 July 2018) https://bniajfi.org/community/Inner%20Harbor_Federal%20Hill/

Jasanoff, Sheila. "Future Imperfect: Science, Technology, and the Imaginations of Modernity," in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power,* ed. Sheila Jasanoff and Sang-Hyun Kim Chicago: University of Chicago Press, 2015.

Jasanoff, Sheila. "Imagined and Invented Worlds," in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power,* ed. Sheila Jasanoff and Sang-Hyun Kim Chicago: University of Chicago Press, 2015.

"John C. Armor, Esquire - Correspondence - General, 1972-1977," 1972-1977; Movement Against Destruction Records; Series 4, Box 2, Folder 22. University of Baltimore Special Collections and Archives.

Keidel, Janelee. "An expressway bridges a gulf between people." Page 2. Section K. *The Sun* (1837-1989), 17 August 1969.

Keidel, Janelee "Ulterior Designs Hinted in Urban Design Offices." Page 6. Section C. *The Sun* (1837-1989), 27 August 1969.

Kline, Ronald and Trevor Pinch. "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States." *Technology and Culture* 37, no. 4. (Oct. 1996), 763-795.

Larkin, Brian. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42, no. 1 (2013), 327-343.

Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network Theory.* Oxford: Oxford University Press, 2005.

Latour, Bruno. *Science in Action*. Cambridge, MA: Harvard University Press, 1987.

Latour, Bruno. "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts." In *Technology and Society, Building Our Sociotechnical Future.*, edited by Deborah J Johnson and Jameson M. Wetmore. Cambridge, Massachusetts: MIT Press, 2008. 151–80.

Latour, Bruno. *We Have Never Been Modern*. Cambridge, MA: Harvard University Press, 1993.

Lefebvre, Henri. *The Production of Space*. Malden, MA: Blackwell Publishers, 1991.

Lieb, Emily. "Row House City: Unbuilding Residential Baltimore, 1940–1980." Dissertation: Columbia University, 2010.

"MAD, et. al. vs. John Volpe, et. al. - Original Complaint, 1972-10-10," 1972; Movement Against Destruction Records; Series 4, Box 2, Folder 29. Movement Against Destruction (MAD) University of Baltimore Special Collections and Archives.

"MAD, et. al. vs. John Volpe, et. al. - Progress Reports, 1972-1975," 1972-1975; Movement Against Destruction Records; Series 4, Box 2, Folder 28. University of Baltimore Special Collections and Archives.

Marchand, Roland. "The Designers go to the Fair II: Norman Bel Geddes, The General Motors "Futurama" and the Visit to the Factory Transformed." *Design Issues* no. 2 (1992): 22-40.

McCormack, Derek. "Geography and abstraction: Toward an affirmative critique." *Progress in Human Geography* 36, no. 6 (December 2012) 715-734.

"Memberships," 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 17. University of Baltimore Special Collections and Archives.

"Membership-Member Organizations, 1970-1975," 1970; Movement Against Destruction Records; Series 1, Box 1, Folder 20. University of Baltimore Special Collections and Archives.

Merrifield, Andy. 2006. *Henri Lefebvre: A Critical Introduction*. New York, NY: Routledge.

"Minutes 1968," 1968, Movement Against Destruction Records; Series 1, Box 1. Folder 5. University of Baltimore Special Collections and Archives.

"Minutes- Part 1: 1969-01-1969-06," 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 6. University of Baltimore Special Collections and Archives.

"Minutes – Part 1: 1970-01-1970-06,"1970; Movement Against Destruction Records; Series 1, Box 1, Folder 7. University of Baltimore Special Collections and Archives.

"Minutes, 1971," 1971; Movement Against Destruction Records; Series 1, Box 1, Folder 9. University of Baltimore Special Collections and Archives.

"Minutes, 1972," 1972; Movement Against Destruction Records; Series 1, Box 1, Folder 9. University of Baltimore Special Collections and Archives.

"Miscellaneous Court Cases - Ward, Thomas vs. Ackroyd, Richard - #71-930-M & Sierra Club, Inc. vs. Volpe, John A. #71-1118-M, 1972-06-08," 1972; Movement Against Destruction Records; Series 4, Box 2, Folder 45. University of Baltimore Special Collections and Archives.

Mohl, Raymond. "Citizen Activism and Freeway Revolts in Memphis and Nashville: The Road to Litigation." *Journal of Urban History* 40, no. 5 (2014), 870-893.

Mohl, Raymond. "Stop the Road: Freeway Revolts in American Cities." *Journal of Urban History* 30, no. 5 (2004), 674-706.

Moon, Suzanne. "Building from the Outside In: Sociotechnical Imaginaries and Civil Society in New Order Indonesia," in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power,* ed. Sheila Jasanoff and Sang-Hyun Kim Chicago: University of Chicago Press, 2015, 174.

"Moses Envisages Future Highways." New York Times (1923-Current file), Page 11. (21 January 1940). ProQuest Historical Newspapers.

Moses, Robert. "Baltimore Arterial Report," SASB M2 - Milstein Division - Room 121 – New York Public Library 9 October 1944.

Moses, Robert M. "Slums and City Planning." *Atlantic Monthly.* (Jan. 1945): 63-68.

Movement Against Destruction v. Volpe, 361 F. Supp. 1360 (D. Md. 1973).

National Environmental Policy Act of 1969, 42 USC § 4321 (1969).

Nye, David E. *Electrifying America: Social Meanings of a New Technology.* Cambridge, MA. MIT Press, 2001.

"Owings, Nathanial A. "The Rebirth of A Queen." The American Aesthetic, 1969," 1969; Movement Against Destruction Records; Series 7, Box 7, Folder 100. University of Baltimore Special Collections and Archives.

Pinch, Trevor and Wiebe Bijker. "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other." *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology.* Cambridge, MA: MIT University Press, 1997, 17-50.

Porter, Theodore M. Trust in Numbers: The Pursuit of Objectivity in Science and in Public Life. Princeton: Princeton University Press, 1995.

"Relocation Action Movement," 16 Jan. 1968; Movement Against Destruction Records; Series 7, Box 7, Folder 105. University of Baltimore Special Collections and Archives.

Rose, Mark H., and Raymond Mohl. *Interstate: Highway Politics and Policy Since 1939*. Third. Knoxville: University of Tennessee Press, 2012.

"Rosemont Public Hearings - Rescind Condemnation Ordinance, 1973-06-21" 21 June 1973; Movement Against Destruction Records; Series 6: Box 6. Folder 56. University of Baltimore Special Collections and Archives.

"Rosemont." 1969; Movement Against Destruction Records; Series 1, Box 1. Folder 32. University of Baltimore Special Collections and Archives.

Rosenberg, Ronald H. and Olson, Allen H., "The Federal-Aid Highway Construction Process: Procedures, Cases, and Plaintiff Strategies" (1974). Faculty Publications. Paper 660. 1223-1253.

San Antonio Conservation Soc. v. Texas Highway, (1970).

Sandtown-Winchester/Harlem Park" 2016. Baltimore Neighborhood Indicators Alliance. (Accessed 19 July 2018) https://bniajfi.org/community/Sandtown-Winchester_Harlem%20Park/

"Sierra Club, 1970-1971," 1970-1971; Movement Against Destruction Records; Series 2, Box 1. Folder 83. University of Baltimore Special Collections and Archives.

Shapin Steven and Simon Schaffer. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life.* Princeton, NJ: Princeton University Press. 2011.

Soja, Edward W. *Seeking Spatial Justice*. Minnesota: University of Minnesota Press, 2010.

Star, Susan Leigh. "Ethnography of Infrastructure." *American Behavioral Scientist* 43, no. 3 (1999), 377-391.

Star, Susan Leigh, and James R. Griesemer. "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39." *Social Studies of Science* 9, no. 3 (1989), 387-420.

"Super Highways." New York Times (1923-Current file), Page 8. Section E., (28 January 1940). ProQuest Historical Newspapers.

Taylor, Charles. *Modern Social Imaginaries*. Durham, NC: Duke University Press. 2004.

"To New Horizons," The Internet Archive, 1940, Accessed 1 May 2018, video, https://archive.org/details/ToNewHor1940.

"The Curious Connection between 1939 World's Fair in NYC and the Port-au-Prince's Bicentennial in Haiti." Queens Museum. Accessed July 03, 2018.

United States. National interregional highway committee. *Interregional highways: Message from the President of the United States, transmitting a report of the National interregional highway committee, outlining and recommending a national system of interregional highways*, Washington: U.S. Govt. print. off., (1944).

"Urban Design Concept Associates- Franklin/Mulberry Corridor," 1969; Movement Against Destruction Records; Series 2, Box 7, Folder 125. University of Baltimore Special Collections and Archives.

"Urban Design Concept Team - Part 1: 1967-09-09-," 1967; Movement Against Destruction Records; Series 7, Box 8. Folder 1. University of Baltimore Special Collections and Archives.

"Volunteers Opposing Leakin Park Expressway, Inc.(V.O.L.P.E.), 1972-1973" 1972-1973; Movement Against Destruction Records; Series 1, Box 1. Folder 94. University of Baltimore Special Collections and Archives.

Warner, Michael. *Publics and Counterpublics.* Brooklyn, NY: Zone Books. 2002.

Wong, Sidney. "Architects and Planners in the Middle of a Road War: The Urban Design Concept Team in Baltimore, 1966–71." Journal of Planning History 12, no. 2 (2013): 179-202.