# ON CITY IDENTITY AND ITS MORAL DIMENSIONS

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The majority of people on Earth now live in cities, and estimates hold that 60 percent of the world's cities have yet to be built. Now is the time for philosophers to develop a philosophy of the city to address the forthcoming issues that urbanization will bring.[1] In this dissertation, I respond to this need for a philosophy of the city by developing a theory of city identity, developing some of the theory's normative implications, illustrating the theory with a case study, and outlining the nature and future of philosophy of the city more generally. Indeed, this dissertation is only a part of my larger project of founding and institutionalizing this new field of both academic and socially-engaged philosophical activity. Throughout the history of the discipline, other areas such a personal identity have received numerous considerations, along with the concept of identity as an abstraction. For example, there is a bounty of research addressing problems pertaining to how objects and people retain an identity over time and claims about identity in general. While one could argue that cities are not any different than any other object, such an account fails to consider that a city's dynamic nature makes it dissimilar to other things. To illustrate this point, I develop a position called dynamic composition as identity theory that provides a framework for understanding the identity of a city, exhibiting that views within analytic metaphysics are too narrow to apply to all cases. After establishing a concept of city identity, I use an applied mereology to develop a model of city identity that shows how the parts of a city fit together to form a complete city. This model introduces the normative dimension of my project by providing a way to identify how incongruence between a city's parts can cause problems for residents'

wellbeing. To understand the moral dimensions of infrastructure, I argue that moral theory alone is ill prepared to adequately demonstrate its full range of effects. Yet, instead of developing another moral theory, we can supplement existing moral theories with the concepts of sustainability and resilience thinking to account for the elements that traditional moral systems neglect. I support this view with a detailed account of transportation infrastructure. Namely, I show that current frameworks for assessing transportation infrastructure are inadequate, and employ the method of complex moral assessment developed earlier to make such assessments. Lastly, I show how the research in this dissertation counts as intra-disciplinary research, a new kind of method for philosophical research.

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# Preface

When I started thinking about urban environments, philosophy of the city was not a formal area of study. Finding philosophers who shared my enthusiasm for philosophical approaches to the city was challenging. After meeting a like-minded philosopher, Michael Menser from Brooklyn College, I gained hope that philosophy of the city had a future. The following May, we met for tacos on his turf during an extended layover en route to Puerto Rico. Shortly after this meeting, we sent out a call-for-papers for the first philosophy of the city conference that would take place during December later that year in New York.

The conference was a huge success. Philosophers came from China, Portugal, France—all over the globe. The scope of presentation topics was wide: the city and exile, urban parks and open spaces, the city and imagination, and the aesthetics of the built environment, to name only a few. To connect these maverick philosophers with municipal leadership, we arranged to have participants meet with New York City Council member Jumaane Williams over homemade Indian cuisine from Mukti's Kitchen, made with local, sustainable ingredients.

The following year, two friends, Luis Diaz a philosopher at Universidad Autónoma Metropolitana in Mexico City and Victor Hernandez, a philosopher at Universidad Autónoma Cuidad Juarez, and I organized the second conference in Mexico City, with some reservations. Although we wanted to ensure that philosophers in Latin America could participate in the developing philosophy-of-the-city conversation because urbanization is a global event and we wanted several cultural perspectives, we worried that philosophers from the United States would not submit proposals due to fears of *narco* violence found throughout much of Mexico. To our surprise, we received numerous submissions from the United States and all over the world including Egypt, Finland, Colombia, and Canada.

With presentations from analytic and continental scholars, we were excited to chip away at a long-standing disciplinary divide, at least in this regard. Continuing with the tradition established in Brooklyn of connecting philosophers with practitioners, a professional planner for Mexico's federal government, Gabriel Mosqueira, gave a presentation alongside philosophers. Despite the success, several scholars who were accepted did not receive funding to travel from countries such as India and The Philippines. To make the conference accessible to more people, for 2015, I co-organized a three-part conference series at the University of Hong Kong, Portland State University, and the Universidad Autónoma Metropolitana in Mexico City with colleagues working at these universities.

Along with these undertakings, during 2014, Michael Menser, Jules Simon (University of Texas at El Paso), and I formed the Philosophy of the City Research Group as an official affiliate group of the Eastern Division of the American Philosophical Association, holding our first session during December of 2014 in Baltimore, Maryland. Recently, I spearheaded measures to create the *Philosophy of the City Journal*. The ability to discuss the city with philosophers from different academic, social, and political backgrounds has played a significant role in shaping my philosophical views about the city, a notion that was evident in the initial title this dissertation, *Philosophy of the City: from the Armchair to the Streets*.

Drawing from research areas such as social justice, environmental ethics, and philosophy of technology, it breaks away from traditional approaches. In a broad sense, the contribution to the discipline of philosophy that I make with this dissertation is to show how philosophy of the city is emerging as an independent subfield through providing five journal-length articles, each centering on different philosophical perspectives on the city such as analytic metaphysics, moral

theory, applied philosophy, and metaphilosophy. One can read them as a single body, or one can read them individually.

The former title of this dissertation shows that my thoughts regarding the city has an extensive range and serves several purposes. For instance, it has sections that consist of highly abstract theory, research from the armchair. Yet, it also has several applied dimensions, examinations of the streets. In subfields such as philosophy of technology or philosophy of law, the 'of' in the name means something like, 'examining X's fundamental nature and elements,' or 'the epistemological, metaphysical, ethical, and aesthetic concerns of a subject.' For philosophy of the city, the same ideas apply. Philosophers of the city aim to reveal an accurate understanding of the city, some dimension of the city, or an aspect of urban life, problematizing the city so that fleshing out answers shows how things are beyond initial observance. I also aspire to shape this field to do philosophy *in* the streets, where 'in' would mean working in close collaboration with a variety of non-philosopher stakeholders. Although the defining research questions within philosophy of the city remain in developing stages, the following essays count as possible directions and evidence that this emerging subfield has rich research veins.

# CHAPTER 1

## INTRODUCTION

This dissertation is a response to Hans Jonas' (1984) major work, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. Rather than a critique, it is an appreciation of the insights that he reveals regarding humankinds' moral obligations in light of technology's total impact on the planet and its parts. It is a humble contribution to how we understand our place in the world, zeroing in on where most people on Earth live, the city. Considering how cities play a significant role in determining the quality of people's lives, framing such issues around a Jonasian inspired framework provides a moral analysis wherein we can determine good courses for future action while learning from history's moral shortcomings.

For instance, Jonas' primary motivation is to reveal how traditional ethical theory fails to account for the moral consideration of non-human species, ecosystems, the accumulating effects of technology, the global impact of technology, and future generations (Jonas 1984). Like him, I argue that we need to philosophize about material culture and to extend and modify (not completely reject) our moral theories to account for new realities created by the human-built world.

Jonas argues that we owe a debt to ourselves that requires us to preserve the conditions for a genuine human life for distant generations, so that they can flourish in the same ways that humans flourish today (*ibid*.). Throughout this text, he only references the city in two passages, holding that the city is our greatest artifact (Jonas 1984, 3-4):

> The greatest of these works was the city. . .Cities rise and fall, rules come and go, families prosper and decline; no change is there to stay. . .So, here, too, in his very own artifact, the social world, man's control is small. . . .[I]n the city, the social work of art, where men deal with men, cleverness must be wedded to morality, for this is the soul of its being.

Jonas' focus is broad, addressing humankind's dealings with technology in terms of meta-ethics and normative ethics, but he also takes on metaphysical ideas and political philosophy when appropriate. Perhaps Jonas would argue that the imperatives that he gives us for preserving the conditions for human life apply to the city also. The second instance wherein he discusses the city concerns how humankind has annihilated the boundary between city and nature. Jonas holds that the city has consumed nature, and now humankind must learn to manage this condition in a manner that lacks precedent. This dissertation, written in the spirit of Jonas, wrestles with some of the questions that he did not ask. In order to make such inquires, I start with the question, "how can we account for a city's identity?"

Accounting for a city's identity must layout the conditions required for talking about it, and what it means to make statements about it. Although such a task is challenging, it is possible. One could hold that people who live in or who are familiar with a city can tell us about its identity. Such declarations could be consistent with a city's identity, but if that were the case, it would be the case only as a co-extensive condition. In other instances wherein a person claims to know about a city's identity, such claims might or might not be true, or such claims could be partially true. Yet, numerous people live in cities, and one problem is that each individual will have a different perspective on a city's identity.

While one could argue that there is a plurality of perspectives on a single city's identity, this claim does not prove that a city has several identities. It only proves that several perceptions of a city's identity are possible. In fact, each resident could have a unique perspective on a city's identity. Yet, this notion does not prove that a city has several identities. Contrary to such views, I argue that each city only has one identity, but each individual or group experiences that identity differently, based on the factors that make up how they see the world.

We can reconcile these views through maintaining the position that everything that a city has plays a part in how a city forms its identity. At the same time, we can acknowledge that people will account for how the parts of a city affect them. For example, a person who lives in a part of the city with a low crime rate, no serious pollution, or public health concerns could hold that they live in a worry-free city. However, people living in areas of the city where crime rates are high could argue that they live in a dangerous city. A city can have areas that are safe and other areas that are dangerous—both areas play a role in defining a city's identity.

Thinking about the identity of a city, I agree with David Lewis's thoughts about identity in general. Lewis (1986, 192) argues: "Everything is identical to itself: nothing is ever identical to anything except itself." When it comes to theories about how we can account for a city's identity, my views about identity differ from Lewis' weak composition as identity theory, a claim holding that an entity's composition is a *kind* of identity. (Lewis 1991). For example, the first essay, "City Identity: Toward a Dynamic Composition as Identity Theory," shows that while current positions in analytic metaphysics (such as Lewis's above) are geared toward understanding the conditions that make statements about identity possible, existing theories within analytic metaphysics cannot account for the conditions that give cities identity.

In turn, I argue that this void in the literature creates the need to develop a theory that covers certain aspects of a city's identity, a theory that I refer to as dynamic composition as identity theory. Although philosophers are the main audience for this article, it could also be of interest to urban enthusiasts, researchers, and municipal employees. Within neighboring fields such as urban planning, urban studies, sociology, anthropology, advertising design, along with a few philosophers, the term 'city identity' is frequently used, but it lacks a shared, common meaning. I try to lend some coherence to this conversation.

My goal in this essay is to layout the necessary conditions for defining city identity, providing a starting point for having conversations about the moral conditions that emerge from a city's identity. One could view this essay as a response to critical geographers such as David Harvey (2008) and Neil Smith (1986). While their research illustrates how forces such as capitalism control how a city gains characteristics of identity through unjust means, this essay shows how an underlying structure of identity makes it possible for cities to have such characteristics. In other words, this chapter is more concerned with the conditions for the possibility of identity than in how those conditions can be warped in morally salient ways that forms the core of the following chapter.

Chapter three, "An Applied Mereology for the City: Unifying Science and Philosophy in Urban Planning" continues to explore the topic of city identity by expanding into its normative dimensions. It uses city identity as a theoretical device to facilitate the process wherein urban planners not only design the city, but design it so that its identity supports justice. (This chapter is published in *Science and Engineering Ethics, DOI 10.1007/s11948-015-9696-3,* print forthcoming.) To unpack this claim, I employ dynamic composition as identity theory to shows how philosophers of the city can add to research outside of philosophy to produce socially applicable knowledge. For example, based on their research showing that growing cities follow basic principles, two theoretical physicists, Luis Bettencourt and Geoffrey West (2010), call for researchers and professionals to contribute to a grand theory of urban sustainability. From their studies, they come up with a 'science of the city' to help urban planners deal with problems that arise from population increases.

Although they provide valuable insights for understanding urban sustainability issues, they do not give planners a practical means to deal with problems on the job. I argue that developing

an applied mereology (a theory about part-to-part and part-to-whole relationships) to understand the concept of 'city identity' gives professionals and researchers a theoretical device for addressing urban issues, including ethical concerns. This theoretical device provides a way to bring city identity into a person's mindset so that they can understand how other planning decisions will affect it. To utilize this device, I devise a mereological model of city identity. This model illustrates how a city is composed of constantly changing parts, and these changes constantly redefine a city's identity, making it dynamic. Using this device and this model provides a way to understand how parts of a city affect each other, how they affect the city as a whole, and how they affect the city's identity. Developing this model shows how a 'philosophy of the city' contributes to Bettencourt and West's call for a grand theory of urban sustainability (Bettencourt and West 2010). Considering the fact that researchers have developed mereological approaches to help understand problems in computer science, engineering, and the human body, it is my hope that such an approach can benefit an understanding of how a city's parts fit together.

The fourth chapter, "The Moral Dimensions of Infrastructure," extends my emphasis on normative issues by zeroing in on public facilities (published in *Science and Engineering Ethics DOI 10.1007/s11948-015-9663-z;* print forthcoming.) This essay exhibits how moral issues in urban planning involving technology, residents, marginalized groups, ecosystems, and future generations are complex cases, requiring solutions that go beyond the limits of moral theory. Along with normal planning problems, there is incongruence between moral theory and some of the objects that require moral evaluation, including urban infrastructure. Despite this incongruence, there is no need to draft an additional moral theory. Instead, a supplemental measure that is compatible with existing moral positions will do.

My main goal in this chapter is to illustrate the need for this supplemental measure, describe what it looks like, and demonstrate how it works with moral theories that already exist. It lays the groundwork for how we can address moral issues that affect individuals in society for cases wherein we cannot use justice language to talk about individuals' relationship with the city as a governing body that facilitates interactions that involve aspects such as equal distribution of services, harms, and benefits. In chapter four, I talk about how the actions of urban planners affect individuals, but we cannot hold planners morally accountable due to several factors that cause problems for pinpointing several kinds of cases wherein culpability comes in question. Yet, planning initiatives and implementations are actions that remain subject to moral scrutiny. In turn, talking about such actions as either being moral or immoral actions makes sense.

Regarding justice, I limit my use of the term throughout this dissertation to cases wherein a municipal governing body acts as a medium for dealing with topics such as the distribution of social services and the implementation and operation of public infrastructure. In several instances, I refer to a pluralistic environmental justice framework because it makes room for several different kinds of considerations that come into question when we think about how infrastructure affects that lives of residents as governed by a municipality. While there will always be larger, National or State justice issues lurking in the background, justice at the municipal level plays a significant role in the lives of residents because city leaders have a more direct ability to mitigate certain kinds of harm associated with the activities that they oversee.

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Bearing in mind that including considerations for sustainability have proven to be a challenge for municipalities, I suggest that urban leaders can employ ethical frameworks to assess how the principles of sustainability or resilience thinking as they amend masterplans or piecemeal initiatives to include such measures. Referring to an environmental justice framework means that justice concerns involve cases wherein a minority group receives oppression from a municipality while larger groups do not receive the same treatment. For dealing with such cases as they pertain infrastructural needs, several instances require an environmental justice framework to pinpoint the precise nature of injustice. To address other instances that involve a large group that receives harm due to municipal governance, environmental justice frameworks cannot provide the kind of coverage that we find with justice cases. In this chapter, I develop a means of having conversations about the moral aspects of cases involving infrastructure that do not quite appeal to justice frameworks, "complex moral assessments." In the next chapter, I flesh out complex moral assessments through zeroing in on transportation infrastructure issues in the US.

This chapter, "A Different Trolley Problem: The Limits of Environmental Justice and the Promise of Structural Ethics," illustrates how complex moral assessments can address problems that lack proper support under existing frameworks. For instance, in this article, I argue that harmful conditions such as public health impacts, lengthy commute times, mental health issues, and economic burdens that the public endures due to municipal transportation systems are morally reprehensible outcomes. Environmental justice frameworks provide the necessary criteria for

identifying these kinds of issues, but the limits common to all such frameworks impede our ability to determine moral responsibility in all instances. To determine the conditions for such responsibilities, we can use the approach I developed in the preceding chapter. This approach uncovers the nuances associated with responsibility in complex systems, revealing different grades of accountability.

To unpack the above-mentioned views, I provide some background details regarding the social and political nature of the existing transportation infrastructure in the United States, followed by an account of the harms resulting from structures. To assess the nature of such injuries, I refer to the environmental justice literature to determine exactly how such damages impact people's lives. After clarifying this point, we understand the limits of environmental justice paradigms, gaining perspective on the necessary steps that are required for going beyond them. Lastly, I exhibit how a complex moral assessment of transportation infrastructure gives us a way to talk about moral responsibility in such instances and examine future areas for research.

The final chapter, "Intra-disciplinary Research as Progress in Philosophy," shows that philosophy of the city has recently emerged as a new subfield, garnering interest from researchers across the globe. While most inquiries in this area have 'the city' or an urban issue as common ground, particular approaches engage in a specific kind of study identified as 'intra-disciplinary research.' Similar to the structure of an interdisciplinary approach, it combines several subfields from philosophy to address issues that belong to many disciplines. Essays such as the ones comprising this dissertation count as examples of this new kind of progress in philosophy.

An in-depth investigation shows that this practice goes against assumptions about how philosophy, as a discipline, advances. Instead of thinking about definitively answering philosophical questions as the sole avenue to progress, this route combines research strengths from

various subfields. Engaging in this process not only increases philosophy's set of methods, but it also benefits people researching urban issues outside of the discipline. Such an approach is mostly consistent with Carlo Cellucci's heuristic view; a position that he argues is the trademark of fruitful inquiry (Cellucci 2014). Considering that this body of work counts as a metaphilosophic testament to the emergence of a new subfield, it seems fitting that it should include a reflective element wherein I examine the underlying structure. Considering these essays as a corpus, the principle idea is that examining the fundamental structure of a city's identity provides the necessary insights to make it favor justice. Instead of asking, 'what is a just city?,' this dissertation holds, 'here is one way to move a city toward justice.' If I had the time and skills, I would solve the grand philosophical riddle, 'what is justice?' but, for brevity's sake, a fuzzy notion of the concept, one could argue, is enough of a target that we can aim for and still make progress. "Fuzzy" suggests aspects found in most contemporary approaches such as fairness and equality; for the purposes of this dissertation, this target includes a participatory dimension.

CHAPTER 2

# CITY IDENTITY: TOWARD A DYNAMIC COMPOSITION AS IDENTITY THEORY

Philosophers and scholars use the term "city identity," assuming that it has an understood meaning, but this is not the case. Accounting for a city's identity is a challenging undertaking due to the city's complex nature. Composition as identity theory provides insights into city identity, but it has limits that hinder a complete understanding. To overcome this obstacle, the author suggests the development of a dynamic composition as identity theory.

## Introduction

Most research that deals with city identity does not come from philosophy, despite the discipline's rich history with cities.[2] While this notion might not shock some urban theorists, it could come as a surprise to philosophers, considering that identity is an active area of disciplinary investigation. Most conversations about identity within philosophy address it in the abstract or in terms of objects or persons (Noonan and Curtis 2014). The identity of a city, however, is a philosophically rich topic that presents challenges for composition as identity (CAI) theory within mereology, a theory concerned with the relationship of part to whole (Varzi 2015).

The thesis that I want to advance in this paper makes this point clear: a city's identity is the parts that it has at a given time and how those parts fit and work together. While research within CAI has advantages for understanding the identity of a city, it also has limits. To support this position, I organize this paper in the following way. First, I examine current uses of city identity across academia, showing how they fail to account for a philosophically robust understanding of the term. While a few philosophers refer to it in their work, they assume that it has a common and understood meaning. Other scholars associate it with the professional practice of city branding

[2] For more information about this history, see Meagher, S. (2008) Philosophy and the City. Albany, NY: SUNY Press.

(Kaneva 2011). Some of the definitions that they employ are flawed, inadequate, and in some cases, could support injustice. After revealing problems with its current use, I explore the benefits and disadvantages of certain CAI approaches for understanding city identity, arguing that a theory that can account for the many facets of city identity requires the development of a refined approach, one that I call "dynamic composition as identity theory.

**Engaging City Identity within the Discipline**

Although philosophical works that mention "city identity" are lacking in the literature, certain instances of its use suggest that there is a commonly understood definition. The term sounds unproblematic, but this is far from the case. For example, Manuel DeLanda (2006, 106) claims: "The processes that stabilize a city's identity concern both the sharpness of its physical borders as well as the routine human practices taking place within those borders, in particular, the form taken by *residential practices*." From this context, DeLanda must hold that city identity involves the relationship between topographical boundaries and social customs. I do not see anything wrong with DeLanda's claim, but I have reservations due to the lack of information concerning what he thinks that city identity means. My point is not to criticize DeLanda. His assemblage theory research does not require an unpacked account of the term. He uses assemblage theory to explain the formation of social networks, ranging from small communities to nation states. I do not believe that the reader requires an explanation of city identity to understand his point, but he does pass up an opportunity to explore it.

David Weissman (2011) provides an ontological account of cities, emphasizing ten points intended to explain the inner-workings of cities, defining the city during the process. While one could object that his interpretation of the city rests on subjective experience and unsubstantiated

assertions, my primary concern rests with his simplistic, unsupprted appeal to city identity. For example, Weissman (2011, 217) holds:

> A city's identity is more than the effects of its bulk and boundaries. City pride is sabotaged if its public identity—its reputation—is merely symbolic. Loyalty is strained if the name rings hollow (the New York Yankees displaced to New Jersey), though attenuated identity is tolerable and appropriate when a metropolis, not a clearly bounded concentration of people, buildings, streets, and tasks. . . .Every such city retains a degree of symbolic integrity, but identity is thin if one is a New Yorker of sorts living in Stanford or Short Hills.

From this passage, Weissman's description of city identity adds little to a conversation about the conditions that underlie the term. His contribution to unpacking it rests with an assertion holding that there is more to a city's identity than objects and markers of political jurisdiction. Instead of defining the term, he focuses on vague appeals to authenticity. Such notions do intersect with city identity in certain respects, but the patterns that make understanding city identity possible always come before concerns of authenticity.

In *The Spirit of Cities: Why the Identity of a City Matters in a Global Age*, Daniel Bell and Avner de-Shalit (2011) examine nine different urban centers. They argue that each city has a dominant theme emblematic of the city's culture or history, but they do not adequately account for the identity-related conditions that govern how a city forms, maintains, or endures as a population center bearing names such as "New York City." They hold that religion defines the ethos of Jerusalem, but "ethos" and "identity" are not synonymous (Bell and de-Shalit 2011). A city's ethos is part of its identity, not the complete identity. While their take on these nine cities helps us understand their places in history and their current states, a theory of what counts as city identity would complement and bolster their claims by providing a theoretical grounding.

**Engaging City Identity across Academia**

Outside philosophy, theorists have made indispensable contributions toward understanding how cities gain identities, but they do not engage with or define city identity. Several Marxist thinkers and geographers, for example, bypass opportunities to deal with the term, instead focusing on the power structures that shape cities and social justice issues. This view is not a criticism of their work, by any means, because thoroughly revealing the subtle nuances of the deep complexities embedded in terms is not part of their traditions (Patterson 1990). For instance, Henri Lefebvre, David Harvey, and Neil Smith contribute to the study of cities through describing how forces such as capitalism play a significant role in shaping urban centers. The legacy of Lefebvre (2000) provides numerous insights into the processes that cities go through when undergoing changes to their identities (Elden 2007). His notion of residents having a right to the city, for example, addresses several issues tied to their ability to transform built environments, but fleshing out city identity is not Lefebvre's primary motivation (Lefebvre 2000; Purcell 2002).

Following Lefebvre, David Harvey indirectly deals with city identity when focusing on community autonomy (Harvey 2008). Harvey (2008, 23) builds on and emphasizes Lefebvre's ideas, holding that, "[t]he freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights." The notion of city identity remains embedded in his approach to human rights, but he does not fully unpack it. Neglecting this term is not a problem for Harvey's disciplinary orientation. His task involves expanding the lessons of the right to the city.

Following Harvey, Neil Smith (1986) implicitly deals with city identity in his arguments about the nature of gentrification. He argues that gentrification stems from the present capitalist economy that restructures urban space in a cyclical fashion (Smith 1986). In turn, those who financially benefit from the process of gentrification are the ones who give the city several

characteristics of its identity. Such results embody the ideas that Lefebvre championed and Harvey advances, the right to the city. Although this research contributes to how we understand the justice issues connected to city identity, research regarding the essential pattern that underpins a city's identity is missing.

Within other disciplines such as urban planning, researchers refer to city identity in relation to the term "city branding," along with "place branding" and "nation branding" (Kavena 2011). The general idea is that planners can manufacture city identity through giving it a brand, similar to any marketable product. City branding involves framing a city to increase tourism, promoting a city's desired image, and bringing new business or new residents (Lucarelli and Berg 2011). Nadia Kaneva (2011) identifies three dominant streams used to define branding in general: technical-economic, political, and cultural. The former two methods address how and why to brand, and the latter critiques the shortcomings of the technical-economic and political approaches. Evaluating branding's primary models reveals why branding cannot provide a necessary account of city identity.

Simon Anholt's technical-economic model focuses on trade, investment opportunities, tourism, and professional promotions (Anholt 2007; Kavena 2011). He holds that cities develop as advanced brands by competing for limited economic considerations, labor incentives, and resources needed for identity (Anholt 2007). His model shows how people in power can re-create a city's perceived identity. Anholt's model remains epistemologically and ethically problematic because one cannot test its precision. For example, planners employing this strategy could emphasize particular characteristics of a city's identity to attract new residents, especially when such features could be insignificant. If planners thought a certain quality were a liability, keeping it out of view could rank higher on their agenda. Planners countering this criticism could argue

that highlighting particular features of a city's identity or downplaying them would bring new business to the city, benefiting residents through increased revenue. This is a fair objection. Yet, there is no guarantee that these effects will "trickle down." Cherry-picking identity markers could cloak critical justice issues such as economic, health, or environmental interests of residents or marginalized groups.

The political approach model focuses on international relations to define a place's brand. Arguing in favor of the "brand state," this model holds that a country's brand develops externally, receiving validation from other nations (Kavena 2011). Comparing this model to Anholt's, the political approach allows room for criticism from outside parties, increasing its accountability. However, the underlying aim is to persuade people think about a nation, making this approach similar to Anholt's model (Sevin 2011).

Applying this model to the scale of the city, one could argue that determining a city's brand would include surveying groups living in other cities. This approach would counteract the internal bias in technical-economic models. There is no guarantee, however, that this approach provides an accurate account of a city's identity. For instance, people living outside of a city lack access to several of its lesser-known features. In contrast to the previous models, scholars employing the cultural approach ground their research in critical theory, evaluating branding theories and practices as they relate to political power structures and knowledge (Kavena 2011). An important point that comes out of the cultural approach is that nation branding is a neocolonial practice that restricts narratives of national identity to suit a targeted audience (Kavena 2011).

Vigorously defining city identity is neither completely necessary for branding, nor is it embedded within the various descriptions stated above. Available definitions of city identity within branding research are shallow and do not help us understand the term. For instance, Robert

Govers and Frank Go (2009) maintain that power struggles influence local knowledge, affecting social structures, which in turn construct [city] place identity. They argue that true-identity of place rests on unique characteristics existing at a certain place during a particular time, and that all of those things are subject to change and fragmentation (Govers and Go 2009).

While I mostly agree with their description of identity, they do not give a complete account of it and complicate matters with conflicting assertions. For example, claiming that true-identity does not exist, Govers and Go (2009) assert that different perceptions of place identity are only subjective or collective. They argue that relying on the dominant view gets a clearer picture of a place's identity (Govers and Go 2009). Such a view endorses a might-makes-right stance toward city identity, guilty of the naturalistic fallacy. This position only accounts for what the dominant social group believes is true, nothing more. The dominant view could be mistaken. Consider, for instance, that a local government's campaign could convince residents that a city's air and water quality promotes health, when in fact both harm people.

The examples above do not represent an exhaustive list, but they exhibit the need for an account of city identity. Such an explanation would ground and reinforce the efforts of philosophers such as DeLanda, Weissman, Bell and de-Shalit, along with the political works of Henri Lefebvre, David Harvey, and Neil Smith. Considered in a collective fashion, these scholars highlight the kinds of shortcomings prevalent in the ways that people use the term. Such deficiencies alert us to the necessary amendments required for building a case for city identity and provide insights into the scope of what a competent theory about it would include. In the following section, I examine how recent research within CAI has advantages for understanding city identity, and show how the most advanced position has limits. In turn, I reveal the need to develop a theory

that can address the challenges that city identity presents, dynamic composition as identity theory (DCAI).

**Theoretical Support for City Identity**

Describing New York City as "the city that never sleeps," or El Paso, Texas as "the sun city" or Chicago as "the Windy City," involves making identity claims. Although such statements do not give complete accounts of these cities' identities, they represent an important, well-known aspect of the larger whole identity. These nicknames signify identity markers that remain exclusive to particular cities, identity dimensions that many people (at least residents) understand. Surely, a city's identity will include the obvious aspects such as landmark buildings or weather conditions, but they must also include lesser-known features that also give identity to the entire city. One could hold that everything in a city is a part of its identity. Not all things in the city will count the same, but it is challenging to argue that a city has elements that do not at least play a minor role in the formation of its identity.

The Empire State Building, for example, has a significant presence in New York City, revealing the city's strong economic status (among other things). A fire hydrant on Third Avenue has little influence, but it exhibits the infrastructure that safeguards the city. Herein lies the benefit of CAI. According to a version of CAI, strong composition as identity theory (SCAI), taking inventory of the parts of a city satisfies the criteria for what counts as identity. According to SCAI, if we could account for every part of an urban center, despite being a challenging task, then we would know a city's identity. This theory sounds straightforward, but within the CAI literature, it receives criticism for entailing mereological essentialism (ME), a view holding that an object loses its identity if it gains or loses a part (Merricks 1999; Wallace 2014). For example, considering

that SCAI maintains that an object's identity is its parts, if an object gains or loses a part, then it cannot have its identity. Yet, objects continue to exist, and everything that exists has an identity. Hence, SCAI (and CAI) is false (Wallace 2014). Meg Wallace (2014), however, shows that ME is misunderstood. She claims that looking at objects as having modal or "worldly" parts, parts gained or lost as a fundamental characteristic of objects, changes the object's conditions for identity (Wallace 2014). ME, then, is not a shortcoming but an illustration of the circumstances that pertain to how a city forms an identity. Each instance wherein the city gains or loses a part, the identity changes to a degree correlative to the significance of the gained or lost part.

Applying this view of ME to the city, we can talk about a city's identity in a manner that is consistent with SCAI theory that supports basic assumptions about how cities maintain names such as Chicago or Puebla. Moreover, accounting for ME reveals insights into a city's identity. For instance, through always gaining and losing parts, cities perpetually change. This notion suggests that a city's identity is highly dynamic, dissimilar to most other objects. If a city loses a fire hydrant, the change is minimal. If it were to lose an important economic artery, say an entire industry is lost due to neoliberal policy (think Detroit or Youngstown), or a hugely symbolic building (think New York in the wake of 9/11) such a change could significantly alter the city's identity. Most cases wherein a part is lost or gained will have little impact on its entire identity, but having several cases that are spread out over a substantial time span could have a culminating effect on a city's identity.

Consider, for example, the process that George Ritzer (2009) describes as the "McDonaldization" of society, or cultural homogenization. If a city initially had only locally owned "mom-and-pop" retailers, but franchises replaced them over several decades, then the city would experience a gradual identity change. Such a city would have an identity that differs from

before the first chain retailer opened, but the city would retain the same name. To some people, this claim could sound like a contradiction. Yet, thinking about the city as a spatiotemporal object while being mindful about the passing of time, the paradoxical view that a city holds an identity over time while continuously creating a new one makes sense.[3]

Consider the following scenario. Every morning, if someone were to ask the same resident of San Francisco, "Is this San Francisco?" each time she would soundly affirm. If the inquisitor were to follow this question by asking, "How do you know that this is San Francisco?" she could respond in a number of ways, such as appeals to political jurisdiction, noting landmarks such as the Golden Gate Bridge or Fisherman's Warf, or through personal narrative. After twenty years, however, if she were asked, "Is this the same San Francisco that was here twenty years ago?" she could say that it was not the same city (in a way similar to how she is not the same person as twenty years ago). She could reference changes in the political structure of the city, improvements in infrastructure, population increase, crime, or gentrification. She could say, "twenty years ago, I could walk down the street without fear of being mugged. This is not the same San Francisco that I used to know!" In either case, she does not seem to be mistaken in her responses, despite their seemingly contradictory nature. How can this be the case?

To answer this question, consider the following example. If someone were to ask, "Do you remember Detroit in 1950?," she is not asking two separate questions: "Do you remember Detroit?; Do you remember 1950?" She is asking, "Do you remember Detroit in 1950?," which would be, "Do you remember Detroit—1950?'" Connecting Detroit and 1950 with a hyphen signifies the mutual exclusivity of the designations, "Detroit" and "1950." Here, she is asking a person if he

[3] One could argue that change for a city is not any different than change is for a person. Yet, a city is one person plus millions of people, plus coffee shops, banks, data, etc. If one wanted to compare the dynamic structure of a city to another entity, a large corporation might fall under the same category, but making such a case falls beyond the present scope of inquiry.

remembers this specific place during this exact period, not Detroit—1980 or Detroit—2000. During 1950, Detroit had a particular set of parts that differ from the parts of Detroit—2000. Emphasizing time's inseparability from the city accounts for how its identity perpetually changes, even though it retains the same name. It does not make sense to refer to Detroit as Detroit—1950, Detroit—1951, and so on. We simply call it Detroit, even though it is always a "new" Detroit because its identity constantly changes.

Perhaps on a daily basis, cities lose and gain parts, and their identities (if only minimally) change every time that a part comes or goes. The problem here is keeping track of the parts, and certain parts continuously change. While there is not room in this essay to categorize all of the different kinds of parts of a city, one that is particularly relevant is a city's history. Each city has a beginning of its history that is a part, there are periods that count as other parts, and there is the present that counts as a part. I hope that I am not equivocating with the use of the word "part," but using the term shows that a city's history has parts along with other features that have parts, namely that there are different kinds of parts. Buildings are a part of a city. Culture is a part of the city. People are a part of the city. Weather is another kind of part, and history is another. From one moment to the next moment, history is adding small parts to the city. To represent the identity of a city with an appropriate title, referring to a city along with an exact time provides an accurate representation: I am in Shanghai-14:31:20-20-April-2015. In conversation, though, the dimension of time is arguably implied.

Considering that the city as described above is a dynamic object, it does not fit under established SCAI theories. Within the CAI scholarship, Meg Wallace and Einar Duenger Bohn are the only two supporters of SCAI (Cotnoir 2014). Neither of them offers a view that accounts for dynamic objects such as cities. Along with this dynamic character, SCAI theories do not account

for how numerous parts work together, a requirement for understanding city identity. For a city, there are almost an infinite number of parts interacting at any given time. Accounting for all possible interactions is an insurmountable challenge. Building codes, laws, environmental policy, and zoning ordinances, for example, affect business. Transportation infrastructure, wastewater treatment, and energy policy will influence the quality of life for residents. While it is necessary that we account for all of these parts, we must also take note of how such parts work together. In turn, we must go beyond the current limits of SCAI to include dynamic objects such as cities, and for such a task, we need a dynamic composition as identity theory (DCAI).

**Future Directions**

During the outset, I argued that a city's identity is the parts that it has at a given time and how those parts fit and work together. This thesis has at least three areas for future research. One direction concerns the theoretical grounding, another deals with interdisciplinary dimensions, and the remaining direction examines the possibility of trans-disciplinary philosophy, research that has an impact beyond the academy. For the former, the arguments above show that there is reason to go beyond established STAI with DCAI, but fully supporting DCAI requires carrying out more research within mereology to see how it squares with existing issues within the literature, topics that were beyond the scope of this dissertation Fleshing out DCAI theory should reveal its strengths and weaknesses and, in turn, provide more insights into city identity and perhaps other dynamic objects.

In terms of interdisciplinary research, categorizing the different kinds of parts that a city has and identifying the kinds of issues (justice, cultural) that arise from how such parts work together should benefit from and be of interest to scholars across the academy who investigate the

city. While several thinkers in academia examine the city as an interdisciplinary subject, studies concerning how such interactions affect city identity are not forthcoming. Philosophers of the city, however, could make use of research from outside the discipline, and perhaps their findings could benefit other fields through providing insights into the foundational character of urban issues.

Lastly, lessons gained from understanding city identity can produce socially applicable knowledge for urban planners, sustainability managers, engineers, and architects. One rarely finds theoretical, nuanced points pertaining to a city's identity or normativity high on practitioners' agendas (Fontana 2012; Sager 2011). A future research area could develop ways for professionals to use a theory of city identity to give the city characteristics that favor human flourishing instead of merely branding it. Actions such as these assume a normative dimension that correlate with the design, distribution, and efficiency of infrastructure, city services, and policy deserve additional investigation to understand how this dimension squares with DCAI. While this is a lofty aim, professionals working in the above fields could transform a city's identity through the creative integration of measures that improve the conditions for flourishing in the city, and philosophers could help through defining what it means to flourish in today's cities and megacities.

# CHAPTER 3

# AN APPLIED MEREOLOGY OF THE CITY: UNIFYING SCIENCE AND PHILOSOPHY FOR URBAN PLANNING[4]

Based on their research showing that growing cities follow basic principles, two theoretical physicists, Luis Bettencourt and Geoffrey West, call for researchers and professionals to contribute to a grand theory of urban sustainability. In their research, they develop a 'science of the city' to help urban planners address problems that arise from population increases. Although they provide valuable insights for understanding urban sustainability issues, they do not give planners a manageable way to approach such problems. I argue that developing an applied mereology to

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understand the concept of 'city identity' gives planners a theoretical device for addressing urban affairs, including ethical concerns. In turn, I devise a model of city identity to show how a 'philosophy of the city' contributes to a grand theory of urban sustainability.

**Introduction**

Through analyzing data sets covering over one hundred cities, a team of researchers found general principles that belong to most cities. (Bettencourt, Lobo, Helbing, Kühnert, and West, 2007). If we consider that knowing such principles is a prerequisite for understanding the identity of a city, their discovery sharpens our conceptualization of the built environment. Based on their findings, recognizable patterns that correlate with the underlying structure of a city's identity also include problems that arise when urban centers increase in population. Often, such problems involve social and environmental injustice issues (Powell 2009; Colette 2010). In these instances, we must think about such issues as part of a city's identity. Urban planners can use the concept of city identity as a theoretical device for mitigating harm that such issues cause, and they can employ participatory approaches to help remove injustice from a city's identity. Considering the global scale of such problems, this device counts as a humble addition to the necessary measures required for a just, sustainable planet.

Noting the challenges facing the world's cities, Bettencourt and West (2010, 912) call for academics and urban practitioners to make interdisciplinary and trans-disciplinary contributions to a "grand unified theory of sustainability with cities and urbanization at its core." Academics employing Bettencourt and West's research show how to make such contributions. For example, Yosef Jabareen (2013) uses their research to develop new frameworks for strategizing against climate change and environmental risk. Anastasios Noulas (*et al*.) (2012) rely on their work to understand the nature of urban transportation, and Saskia Sassen and Natan Dotan (2011) seek to

understand multi-scalar and ecological conditions of cities to address urban relationships with the biosphere.

Philosophers can help overcome some of the epistemological limits involved in such a grand theory. For instance, Bettencourt and West (*et al*. 2007; 2010) give us grand-scale guiding principles about urban growth, but they do not provide a practical way to employ this knowledge, rendering it nearly useless to the non-specialist. Through using an applied, informal mereology, urban practitioners gain a means of using Bettencourt and West's insights to solve specific planning problems, contributing to a grand theory of sustainability through addressing such concerns on a local level.

Mereology is a study of a theory concerned with the relationship of parts to parts and parts to wholes (Varzi 2015). Applying mereological concepts lets us make sense of objects that are composed of smaller parts or have overlapping parts (Paul 2002). Through applying this basic structure, we can account for how the parts of a city fit together to form a complete city. Holding that a city's identity equals the totality of its parts, along with time and the interchangeability of parts, provides common ground for conversations about the identities of cities. Such conversations are necessary because they exhibit the kind of cities that exist and the different social and environmental issues that arise in part-to-part and part-to-whole relationships.

In this paper, I provide an overview of Bettencourt and West's research and explain the basic idea behind applied mereology. I use its principles to categorize the parts of a city. My goal is to provide an informal mereological model of city identity that shows how the parts of a city relate to each other and to the city as a whole. The specific purpose of this model is to demonstrate how different kinds of ethical conflicts arise from a lack of congruence between a city's parts. In turn, we see how the concept of a city's identity works as a theoretical device for approaching

social and environmental justice issues on the job. Lastly, the paper concludes with some recommendations for future areas of research for academics and highlights how recent 'real-world' projects show promise for similar measures that are required for a grand theory of urban sustainability.

**The Benefits of a Science of the City**

Bettencourt and West (*et al*. 2007, 2010) exhibit that most growing cities follow a set of basic principles, allowing for a significant degree of predictability. Despite political, economic, or social considerations, they hold that cities essentially follow a pattern of growth (*ibid*.). One key point from their study shows that doubling the population of a given city only requires about an 85% increase in infrastructure, including elements such as roadways and water services (*ibid*.). From this finding, Bettencourt and West (*ibid*.) show that high-density urban centers are more efficient than smaller cities when it comes to resource consumption. Spatially, large cities, by default, increase the environmental aspect of their sustainability status.

Although there remains much variation between cities, Bettencourt and West (*ibid*.) conclude that as a their populations expand, the amount of space required for living decreases, economic activities rise, and new forms of cultural expression emerge (and assumingly, old ones die out). As a city grows, positive aspects such as educational opportunities along with wages and GDP increase by approximately fifteen percent more than the expected linear growth, but so do crime, traffic, and public health issues. While it is rather difficult to improve cities that already have a seemingly insurmountable number of problems, cities that overcoming such obstacles achieve a status of resiliency that lasts for decades .

While urban practitioners can use a science of the city for predicting the general kinds of problems that they might encounter, such a practice reveals little about how to approach such conditions in a manner that benefits specific cities or detailed problems. Their science rests on quantitative analysis, giving us a categorical description of urban centers, but each city is identical only to itself, and this notion holds for each city's problems. One cannot assume that the causes of a problem in City A are the exact same causes of the same kind of problem in City B. In turn, a good way to complement Bettencourt and West's (*et al.* 2007) research is to directly analyze urban problems in their contextual settings, an undertaking that requires demarcations of scale that a model of city identity makes evident.

Such a model shows how a city's numerous seemingly incongruous parts function as a unit, as a city. Studying the parts of a city as they relate to other parts and how they relate to the city as an object counts as a mereological exercise. Within the mereology literature, however, philosophers engaged in classical mereology research mainly deal with part relations in a highly abstract and formal fashion (Hovda 2009). Recently, philosophers and theorists have shown how the tenets of mereology have interdisciplinary appeals for the sciences, along with applicable uses for computer science and engineering (Calosi and Graziani 2014). Consider, for instance, that Ludger Jansen and Stefan Schulz (2014) maintain that mereological approaches benefit descriptions of biological organisms, pointing out that mereology receives attention in biology and medicine. Lech Polkowski (2014) shows that mereology has several applications for computer science, such as spatial reasoning and knowledge engineering.

Other researchers, however, stray from a formal grounding to gain insights into additional issues, making their subjects accessible to a wider audience. For example, Frederique de Vignemont, Manos Tsakiris, and Patrick Haggard (2005) employ an informal, applied mereology

to examine how we experience body parts versus how we experience the body. They completely abandon formal methodology, approaching their study in a straightforward manner. In terms of treating the city as an object, an applied and informal approach retains the usefulness of mereology and makes the subject easier for non-specialists to grasp.

Stemming from mereology, strong composition as identity is a thesis about what counts as an identity in the relationship of parts to wholes, maintaining that an object's identity is all of the parts together, and nothing more (Cotnoir 2014). While there are different versions of such theories, the variety that works well for understanding the city is dynamic composition of identity theory. Put briefly, it holds that the identity of a city is all of the parts that a city has at any given time and how those parts fit and work together, bearing in mind that the parts continuously change. Considering that a city continuously changes its composition throughout time, through adding or subtracting parts, describing its composition as dynamic seems fitting. Although such a theory faces other challenges within metaphysics that are beyond the scope of this paper, for dealing with urban issues, the drawback for this position is figuring out the different kinds of parts and how those parts influence each other and the city.[5] In the following section, the focus will be on this challenge.

**An Applied Mereology of the City**

A city has several different kinds of parts. For example, each city has a history, and each part of its history counts as a part. Cities have weather conditions such as temperature, humidity, and

[5] My claims about city identity entail that a city only has one identity, but due to the social and political conditions that govern how people come to know a city's identity, people will describe the same city in several different ways. This topic, along with the kind of pluralism that Iris Marion Young exposed, presents challenges for a model of city identity. However, properly addressing such challenges is beyond the scope of this paper. For more information, see: Young, I. (1990). *Justice and the Politics of Difference.* Princeton, NJ: Princeton University Press.

precipitation, each counting as a unique part. Topographical characteristics are other parts. Of course, there are the kinds of parts that are familiar to us: buildings, cafes, bars, people, roads, building codes, and zoning ordinances. Zeroing in on such parts tells us a lot about the identities of cities. Yet, how are we to think about parts of city that do not come from the city, such as interstate highways or federal laws? Such things count as parts of the city, but counting them means that we must be able to differentiate between the parts.

While listing all of the different kinds of parts is an exhaustive exercise, categorizing the parts relevant to public works is a reasonable task. For such an enterprise, classifying parts as micro and macro is a good starting point. Most things in the city are micro parts. A person counts as a micro part, along with a stretch of sidewalk or a coffee shop. Such parts play a minor role in the overarching narrative of a city's identity. There are numerous kinds of parts to which we can assign labels that help us understand how they differ. For example, most physical-public micro parts are the individual things that people pay for through taxes: a traffic light, a fire hydrant, a municipal courthouse, a police car, or bus. Such parts are "public" in the sense that the public "owns" them—at least this is so in most democracies. A nonphysical-public micro part is an individual thing such as a policy, a zoning ordinance, a fire code, or a specific law. Contrary to physical and nonphysical-public micro parts, a physical-private micro part is one that a person owns such as a car, house, or business, while a homeowners' association guideline would be a nonphysical-private micro part.

A *macro* part is a set of micro parts. The primary difference between them rests on scale. Similar to micro parts, there are physical and nonphysical, public and private categories. Physical-public examples include a police force, a transit system, or a wastewater system. Physical-private parts include things such as a shopping center or a neighborhood. Nonphysical-public macro parts

cover a set of municipal laws, building codes, or tax codes, while a set of neighborhood association guidelines count as a nonphysical-private macro part.

Micro and macro parts can be internal or external. The parts listed above are internal. Internal parts rely on the city as the primary entity wherein they gain their identity through their functioning within the city. The Brooklyn Bridge belongs to New York City because it facilitates travel from Manhattan to Brooklyn. An external part functions primarily for the sake of an entity outside of the city, such as a nation, a state, another city, or a business, even though they have a function within the city. They can be public or private, physical and nonphysical. Examples of external micro parts include a national post office, a national chain retailer, a grocery franchise, or an international treaty or law. The national post office system counts as an external macro part. They "belong" to the city in the sense that they express an operational function within it. In the United States, for instance, most cities have federally funded interstate highways. Their origins are national, not municipal, and they have a national identity that precedes their local identity. Yet, they are parts of cities.[6]

**Thinking about the Parts together: The Role of Meta-structures**

While the classifications above show how parts differ, we lack an account of how they interact with each other. To account for the degree of congruence between a city's parts, employing the use of a theoretical device called a meta-structure shows how well various parts do or do not work as a unit. A meta-structure is all of the present micro and macro parts involved in a city's

[6] This account of a city's parts is not exhaustive. There are other issues that deal with boundaries, smaller parts that compose larger parts, overlapping parts, and so on. The point here is to illustrate how the basic structure of mereology provides planners with an alternative approach for thinking about how a city fits together.

operational structure. The benefit of this device is that it provides a panorama of how well a city is put together; how well it functions.

For instance, there are almost an infinite number of parts interacting at any given time in a city. Residents rely on businesses for goods and services. Retailers use regulations, laws, infrastructure, and banks to facilitate trade. Religious organizations use transportation infrastructure to bring in members. If the micro and macro parts work together without too many serious failures, then the city's meta-structure is strong.[7] The challenging aspect is establishing criteria for what counts as a failure. Scott Campbell (1996; 2013), for instance, points out numerous conceptual and practical issues that we could interpret as failures in planning relating to sustainability and social justice issues. Such issues are contentious topics. While laying out precise criteria would be helpful in this regard, doing so is beyond the present scope of this inquiry. The example below, however, illustrates the necessary points without too much distraction.

For instance, if a city's physical-public macro part (for instance, the Department of Water and Power) works well with a nonphysical-public macro part (set of laws) to deal with a physical-private macro part (powerful neighborhood association) without experiencing a failure (environmental or social injustice, extreme pollution, excessive waste, etc.), then this indicates that the city has a strong meta-structure. If it consistently fails, then one could argue that the meta-structure is weak. To reiterate, arguing that a meta-structure is weak depends on establishing criteria for what counts as a failure. One could assume that indicators of failure would include environmental or social injustice, abnormally high rates of inefficiency, harmful levels of

[7] One might think that a high frequency of successful exchanges between parts shows that a city has a strong meta-structure. While this point is worth examining, frequency becomes irrelevant in the face of certain failures. Consider, for example, if a bridge where to collapse. The frequency of successful exchange involving the bridge could be in the millions, yet one failure could significantly impact several other parts, weakening the meta-structure.

pollution, excessive waste, or detriments to public health.[8] Such failures suggest that a city is not functioning in a manner that supports topics such as human flourishing, sustainability, or justice.

Consider, for example, if an industrial center such as a copper smelting plant works well with city ordinances and international policy, but it harms public health. As a part of the city, the plant weakens the city's meta-structure. Such blight becomes part of the city's identity. One could object to this point, arguing that a copper smelting plant could strengthen a city's meta-structure in other ways. For instance, through gaining needed revenue from the plant, the city could repair infrastructure, build new parks, or implement social services, increasing the degree of congruency between a city's parts.

Considering the total number of parts of a city, one harmful industry might not have a significant effect. One problem is that there is a high degree of complexity involved in such cases, making the evaluation of a meta-structure a complicated task. Despite such challenges, one could argue that interdisciplinary researchers could develop protocols for making such assessments. Although such a task is beyond the purview of this paper, developing such protocols could provide a systematic way to change a city's identity for the better.

While changing a city's identity might sound alarming to some people, most changes to a city's identity are harmless. At the lowest level of identity change, losing or gaining a micro part counts as a minor alteration to a city's identity. This condition makes a dynamic composition as identity theory work well for built environments. If a city remains in perpetual flux due to

[8] I do not spell out what counts as an unjust failure here because it would conflict with my position in the following chapters wherein I claim that one could apply any moral system to urban sustainability issues. Here, I could argue that various kinds of acts count as unjust failures, but such acts require support from specific justice theories. To avoid appealing to theories of justice that require theoretical commitments, I am leaving a vague list. This list gives a general idea of what counts as an unjust failure. Yet, not all failures are concerns for justice, but all failures affect how we can think about meta-structures. For example, from the abridged list above, excessive waste counts as a failure, but not all such cases are concerns for justice. However, all failures affect a meta-structures functionality and integrity.

constantly changing parts over time, and we say that a city is equal to its parts and how they work together, then a city has a special kind of dynamic identity, unlike most other objects. For instance, think about the opening or closing of a restaurant. Few people experience or notice such changes. The loss of a macro part is less common, compared to micro parts. When such changes happen, most people are aware, but the city retains much of its identity. For instance, the identity markedly shifts if a ballpark closes due to a team's relocation. Residents might value the ballpark as a landmark building or public space, giving the city a strong marker of identity, but the residents will adjust and the city will endure.

Despite the idea that a city's identity constantly changes, meta-structures mostly remain stable. Even though parts constantly change, the city continues to function as a unit. Cases wherein they completely lose their identity require a significant change in the number or arrangement of micro and macro parts. Natural phenomena such as a tornado or an earthquake could instantly affect a meta-structure. Hurricane Katrina's impact on New Orleans is an example of a meta-structural shift, showing how nature can play a significant role in a city's identity. Hurricane Katrina disrupted most parts, altering the meta-structure. During the rebuilding process, new or repaired parts gradually changed the city. When the rebuilding is finished, "new" New Orleans will resemble "old" New Orleans, but it will not be the exact same.

Such cases are concerning, but attention should rest on two other causes of meta-structural change. The first sort involves several macro parts simultaneously changing. For instance, when the Russians took control of Berlin, its identity drastically changed, due to an immediate shift in several parts. The Russians replaced or eliminated numerous parts such as laws, police force, and social services. Within a short duration, the Berlin, as people knew it, ceased to exist, and East

Berlin and West Berlin emerged. Instances such as this one should be areas of concern because they could involve human rights or justice issues.

The second kind concerns micro parts. Sufficient changes to micro parts bring on changes in macro parts, creating a different meta-structure. For example, imagine Las Vegas, Nevada without the legal right to gamble. The city, as we know it, would cease to exist. Most businesses, numerous jobs, neighborhoods, and infrastructure depend on the legal right to gamble. If one were to take away this micro part, the degree of incongruence would significantly increase because commerce, infrastructure, and people's livelihoods rest on this "cornerstone" micro part. These parts are not congruent without the law that permits gambling. In turn, eliminating this law in Las Vegas would create a weak meta-structure for the city. One could argue that the city might collapse.

While this hypothetical example caricaturizes the impact of a nonphysical-public micro part, it illustrates the power that one can have. Considering that such instances can drastically alter a city's identity means that they should receive additional study. What is more, other cases involving micro parts illustrate an aggregate power that can alter a city's identity in a gradual manner. Consider, for example, a city with only 'mom-and-pop' restaurants, a city known for its culinary flair. If a multinational conglomerate were to steadily buy and replace each restaurant with chain eateries, the identity of the city would eventually completely change. The city would become one lacking original culinary style, a city that Edward Relph (1976) would characterize as having *placelessness*. The point here is not to rally against franchises, but to show that a city's total identity can change piecemeal.

To make cities better places for everyone to live, municipal officials can amend "broken" parts, add new ones, or eliminate parts. Urban practitioners can improve cities one part at a time,

eventually giving residents a city that provides them with the means to flourish. Changing a city's identity through this piecemeal approach could take years, but one could argue that it serves as a practical guide for improving cities, promoting social cohesion, and removing elements that harm vulnerable populations. Although listing the injustices that can affect a city is exhaustive, the examples below exhibits some common types of harm, and they illustrate how municipal workers can lessen their effects. What is more, these examples show how planners can use a model of city identity to map problems, showing the extent that harmful parts can cause injustice.

**Using a Model of City Identity in Practice: Two Case Studies**

The first case addresses the notion that cities must contend with chain retailers (external micro parts) moving into neighborhoods (internal macro parts) that cause a lack of congruence. Not all such cases lack congruence, but the instances that do lack it show how such occurrences weaken a city's meta-structure. For example, chain retailers often stand accused of homogenizing culture, which George Ritzer (2009) calls the McDonaldization of society. The problem here is not that external parts such as chain retailers are inherently bad, but they raise justice concerns if their activities or presence harms residents, lessening the meta-structure's degree of congruence.[9] If residents want an international franchise in their neighborhood, arguing against their desires would be paternalistic as well as disrespectful of community autonomy. Some cities or communities might prefer the predictability that comes with chain stores and franchises, perhaps favoring a blend of local and global commerce. Cases could exist wherein residents desire the global

[9] It is worth pointing out that congruence does not necessarily entail justice. For example, in certain societies, there can be a high degree of congruence between parts, but there is also injustice. This reason is why I focused on failures in the previous section. Injustice counts as a failure, a condition that could nullify appeals to congruence.

connection to a brand name or product. Issues confronting exploitation of people or ecosystems remains a separate matter apart from global connectivity and trade.

The point is that there are fewer concerns about justice if community members are included in the decisions that affect them. For instance, according to Robert M. Figueroa (2006), we would be dealing with an environmental injustice when organizations exclude communities with little or no power from decisions about policies that affect them. For example, although several residents in Portland, Oregon hold sustainability as a value, not all resident equally share this view (Sullivan 2014). Some residents championed the opening of a grocery store in the Alberta neighborhood of Portland, claiming that it provided relief to a food desert and supported sustainability; however, the plan backfired (Sullivan 2014). Instead of securing food access for long-term residents, incoming whites gained a 'mind-body lifestyle' food outlet (Sullivan 2014). Some time later, history was about to repeat, but local residents voiced their concerns. This time, they were included in the conversation about permitting niche food retailer, Trader Joes into the community (Theen 2014). Due to residents' fear of additional negative neighborhood impacts, Trader Joes backed out of plans to open a store (Theen 2014).

In such cases, there is a lesson for urban planners dealing with social justice issues. Urban planners with good intentions can identify the missing micro part causing a harmful situation. They can remove impediments and work with other municipal leaders and communities to arrive at a solution. A solution including the residents' specific interests would have successfully linked residents' needs with a retailer's goods. For the Alberta residents, direct community representation alleviates the unjust conditions. Including this participatory dimension counts as adding the people, as a macro part, into planning decisions. In turn, planners strengthen the city's meta-structure and work toward creating a just city wherein residents can flourish.

While the example above concerns an external part having negative effects for vulnerable populations, internal parts also cause harm. Consider, for instance, the hardships that minority residents in Portland endure due to the implementation of sustainable mass transit. For example, African Americans residing in the Alberta neighborhood were not only fighting against the effects of a mind-body lifestyle store as discussed earlier, but also they were struggling with urban renewal policies, forcing several renters from their homes due to rent increases that they could not afford (Scott 2012). To make matters worse, a second displacement followed the previous case mentioned above due to the implementation and expansion of Portland's light rail system (Scott 2012). The Portland Development Commission (PDC) sought to lessen the harmful effects through tax revenue policies, yet activists against taxes took PDC to court, toppling 18 anti-displacement measures (Scott 2012). Today, some of the African American churches in the Alberta neighborhood remain, bussing the congregation in from the suburbs (Scott 2012).

While the Alberta case had an unfortunate outcome for Portland, residents of Cully Street worked with the City of Portland to fight gentrification to ensure affordable housing with appropriate zoning measures (Jackson 2012; Parks 2014). In 2012, Sam Adams, Portland's mayor, and the PDC drafted the Neighborhood Prosperity Initiative, aiming to prevent displacement (Parks 2014). Along with city officials, neighborhood alliance groups and Portland State University students worked together to implement preventative measures that would keep housing costs from rising (Parks 2014). One could argue that Adams and the PDC, through including neighborhood groups in the conversation about such policy decisions, acted in a just manner. This conglomeration of parts was congruent, giving the city a stronger meta-structure. Herein lies the advantage of a mereological model. Through giving the residents a participatory role in how

determining how parts would interact, such issues did not cause additional problems and promoted social flourishing.

For instance, the PDC (a physical-public macro part) along with the mayor, (a "cornerstone" physical-public micro part), in conjunction with the community alliance (physical-private macro part), worked with zoning ordinances (nonphysical-public micro parts) to secure the conditions for residents to flourish. In turn, the consequences of the case in the Alberta neighborhood did not repeat. Although the effects of such measures remain in progress, if the concerted effort succeeds, Portland's municipal leaders working to prevent displacement will have a successful model to follow. Future planners in other cities will gain a guide wherein they can assess parts' effectiveness, determining which ones are problematic, beneficial, or perhaps have an untapped strength. When planners act in such a manner, they, along with residents, redefine their city's identity, working toward making a just, sustainable city.

**The Role of Residents' Participation in City Identity**

In the examples above, bringing the residents into the conversations about the decisions that had direct consequences for them improved the situations. Such actions in turn gave residents a role in defining the identity of their city. This notion exhibits how the concept of city identity remains co-extensive with the right-to-the-city literature rooted in Henri Lefebvre, expanded by David Harvey and critical geographers such as Neil Smith (Lefebvre 2000; Harvey 2008; Smith 1986).

Although Harvey does not directly engage with the term "city identity" as a conceptual device, he (2008, 23), holds that, "[t]he freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights." In this passage, he touches on the key ingredient either found or missing from the cases above: participation. In

the previous examples, one could argue that if the communities would have been involved in the decision-making process, then charges of injustice would not hold much weight, according to various models of justice such as Figueroa's environmental justice paradigm (2006). If we apply Harvey's point to the Cully Street Plan, it indicates a step toward just urban planning, considering how such measures alleviate some of the harm from forces such as gentrification, urban renewal, or the implementation of sustainable mass transit systems.

Although Smith (1986) only implicitly deals with city identity in his gentrification research, he points out that those who financially benefit from gentrification are the ones who give the city several characteristics of its identity. In such situations, city identity is inherently a justice issue, considering that processes such as gentrification deny marginalized groups the ability to determine the city's identity. One could argue that practitioners who dismiss justice concerns within sustainable planning means that they would unintentionally side with injustice, considering that such actions do nothing to mitigate harm. In such contexts, city identity is a device that provides urban practitioners with an opportunity to lessen the degree of injustice in their cities.

Such arguments will resonate with practitioners supporting Susan S. Fainstein's view that justice should be the primary driver of planning initiatives and a significant metric for measuring the success of planning outcomes. Yet, it is challenging to completely dismiss justice issues in sustainable planning, considering that the social pillar of sustainability entails justice (Fainstein 2010). Engaging in such practices secures the preconditions for planning in a manner that remakes a city's identity in a just fashion. For instance, if urban planners, engineers, or architects engage in successful projects that make their cities just, then we can label such parts as just, increasing the total amount of justice in a city's identity..

Considering that the ratio of just parts to unjust ones would be higher in select cities, some cities would be more just than other cities. Thereby, a person could claim that City A is more just than City B, based on the ratio of just to unjust parts. One could also make other justice claims through comparison, saying that City C is much more just than City D. Although complications ranging from lacking an accepted conception of justice to nonexistent protocols for implementing measures rooted in such a conception riddle this line of inquiry, it suggests that establishing criteria for what counts as a just city is possible. Due to its usefulness for accounting for injustice (along with other failures) as incongruences between a city's parts, a model of city identity that contributes to a grand theory of urban sustainability is part of the solution to the challenges facing the world's urban centers.

One could object to the points above, holding that a case for using a total accumulation of justice is imprecise, impractical, unverifiable, untestable, and that unscrupulous city officials could manipulate the numbers to increase commerce. Such charges would be fair, but such claims do not appear thus far, and such objections misunderstand the point of creating and using a model of city identity. The aim of employing this model is to achieve a better state of affairs for a given city, to increase the likelihood that all residents can flourish, especially when dealing elements such as rapid urbanization and urban renewal. What is more, holding such an objection suggests that a precise system of measuring justice is an option. It seems far-fetched to think that developing one remains possible, considering that we cannot measure justice with pinpoint accuracy. Despite lacking an accurate metric for quantifying the exact amount of justice within a city, a rough estimate provides urban practitioners with a means to address failures that result from a lack of congruency between a city's parts.

**Future Directions**

While Fainstein (2010) holds that justice should be a prime motivator for planning, she expresses mixed sentiments about participatory approaches as indispensible vehicles for justice. Although her views were fair at the time when she penned them, since then, experiments such as the Participatory Budgeting Project (2015) exhibit how such measures deserve more credit due to their effectiveness. Participatory budgeting (PB), for example, is a practice wherein city councilmembers provide funds to community groups for public projects (Menser 2012). Since 2009, the Participatory Budgeting Project (2015) has connected thirty-five elected officials with over forty thousand constituents in the United States, engaging in over two hundred projects amounting to over forty-five million dollars.

Within a model of city identity, PB, as a part of the city, increases the congruency between several of a city's interacting parts. For instance, community groups (physical-private macro parts) work with public funds (physical-public micro parts) to implement projects such as bike lanes, community gardens, streetlights, and playgrounds (physical-public micro parts) (Participatory Budgeting Project 2015). Michael Menser and Juscha Robinson (2008, 294) explain:

> [PB] is characterized by several basic features: community members determine spending priorities and elect budget delegates to represent their neighborhoods, budget delegates transform community priorities into concrete project proposals, public employees facilitate and provide technical assistance, community members vote on which projects to fund, and the public authority implements the projects. Various studies have suggested that participatory budgeting can lead to more equitable public spending, higher quality of life, increased satisfaction of basic needs, greater government transparency and accountability, increased levels of public participation (especially by marginalized residents), and democratic and citizenship learning.

From this passage, one could argue that PB makes other parts function in manner that avoids injustice and promotes human flourishing. In turn, the parts remain congruent. Such empirically verifiable case studies exhibit that participatory approaches give residents the ability

to play an active role in defining their city's identity. While there is no guarantee that other kinds of participatory approaches will have the success of PB, one could argue that research into participatory approaches such as planning advances studies of how to make it successful.

For example, Kare Umemoto (2001) addresses issues such as the epistemological shortcomings of participatory planning while Jonathan Pugh (2003) identifies practical complications and justice challenges. Others research areas show how science and technology improve the conditions for participatory planning. For instance, Zaheer Khan (et al.) (2014) exhibits the usefulness of information and communication technology devices for participatory urban planning and urban management, and Avery Livengood and Keya Kunte (2012) show how GIS technology bolsters participatory planning efforts. While such advances suggest that improvements to participatory planning are possible, additional research is required to discover how participatory approaches improve congruency between a city's parts and reduce injustice.

**Concluding Thoughts**

When Bettencourt and West (2010, 912) championed a grand unified theory of urban sustainability, they called for a "major international commitment and dedicated transdisciplinary collaboration across science, economics and technology, including business leaders and practitioners, such as planners and designers." Such a call requires significant efforts that might not be possible without their initial contribution described during the introduction, a science of the city.

A science of the city gives researchers and practitioners reliable evidence about the state of cities, yielding predictive measures for combating problems that typically come with population increases. While such information exhibits the benefits of science for urban centers, it also reveals

the limits: science cannot provide normative direction for decisions in urban planning. It is also necessary to determine the rules and regulations of conduct. We do not set out rules of conduct de novo or ex nihilo. Going beyond these limits means acting on the knowledge that scientists make available, actions that subject actors to moral scrutiny. Although we do not usually think about planning measures as opportunities for gauging morality and justice, select cases such as those in this paper reveal how planning decisions have such normative dimensions. Philosophers of the city can complement the work of scientists through revealing a city's identity via mereology, providing a way to approach cities in a manageable fashion that takes a determination of their relationship with justice. One problem is that philosophers cannot interact with planners and municipalities during decision-making moments. Yet, such dialogues could have benefits for residents.

# CHAPTER 4

# THE MORAL DIMENSION OF INFRASTRUCTURE[10]

Moral issues in urban planning involving technology, residents, marginalized groups, ecosystems, and future generations are complex cases, requiring solutions that go beyond the limits of contemporary moral theory. Aside from typical planning problems, there is incongruence between moral theory and some of the subjects that require moral assessment, such as urban infrastructure. Despite this incongruence, there is not a need to develop another moral theory. Instead, a supplemental measure that is compatible with existing moral positions will suffice. My primary goal in this paper is to explain the need for this supplemental measure, describe what one looks like, and show how it works with existing moral theories. The secondary goal is to show that creating a supplemental measure that provides congruency between moral systems that are designed to assess human action and non-human subjects advances the study of moral theory.

## Introduction

An urban planner relying on moral theory when implementing sustainable infrastructure might not always secure moral outcomes. How do moral theories fail in such instances? Aside from the logistics behind each case, they can fail because the moral significance and depth of infrastructure remain misunderstood and, in several ways, overlooked. Specifically, some failures rest on a lack of congruence between the limits of moral theory and subjects that require coverage under them. For instance, morality is a concept reserved for assessing human action, not the objects that humans use. This disconnect exists, but planners' need to assess moral outcomes that often involve infrastructure. Such a condition might lead one to ask, "Is there a need for another theory to comprehend infrastructure's moral significance and depth?" The answer: no. Rather, a supplemental measure that is compatible with existing moral theories and planning goals such as sustainability or resiliency should suffice. This measure should identify infrastructure's moral dimensions and gauge several of its effects.

[10] This entire chapter is reproduced from, Epting, S. (2015) The Moral Dimensions of Infrastructure. *Science and Engineering Ethics*, DOI 10.1007/s11948-015-9663-z, with permission from Springer.

Here is an analogy. If a moral theory were a smart phone, the supplemental measure would be an app. Users can accomplish many tasks with mobile devices, but highly specific activities require them to download apps. A smart phone can help users navigate the globe while communicating, but you must install an app to translate foreign words and phrases. Simply because the device has limits does not mean that engineers must create a new one to replace perfectly good phones, but it suggests users could benefit from a supplemental app. Such is the case with moral theory. When systematized, theories such as utilitarianism and deontology work extremely well for carrying out jobs such as equitably distributing public services such as waste collection, but a supplemental app might help when comparing existing technologies such as toll roads with new and emerging eco-technologies such as some forms of light rail.

My primary goal in this paper is to explain the need for this supplemental measure, provide a description of what one looks like, and show how it works with existing moral systems. The secondary goal is to exhibit that creating a measure that provides congruency between moral systems designed to assess human action and non-human subjects advances the canon of moral theory. Accordingly, I organize this paper as follows. I discuss the limits of moral theory in planning, explain how to go beyond such limits, and reveal how establishing new limits advances moral theory, proposing a future meta-ethical research area for design and engineering ethics.

**The Limits of Traditional Moral Theory in Urban Planning**

The uses of moral frameworks within urban planning range from underpinning design movements to precepts for zoning. Planners employ several approaches, from deontology to care ethics (Upton 2002). Robert Upton (2002), for example, shows that virtue ethics guides the thinking behind New Urbanism. Carol Barrett (2001) champions utilitarianism for solving problems in planning. While

these moral systems provide reliability, their inherent shortcomings remain. They manifest in forms that are particular to urban planning, but they follow the same pattern as they did when originally penned.

Here is a brief sketch. Planners adhering to utilitarianism could make zoning accommodations for a hazardous industry near a less-populated neighborhood. In such a case, an isolated community suffers while remaining residents gain jobs and the city increases its income. Alternatively, if local government officials refused an industry based on deontological maxims, say they decided that no one ought to be regarded as a mere means for economic reasons, then the population would lose needed revenue. This example illustrates the tension between the outcomes of these positions, both being inherently undesirable. Despite the risks to human health, economic benefits for the city justify a neighborhood absorbing the risks, according to the utilitarian planner. The practitioner with a deontological bent will not budge due to a duty to protect residents' right not to be mere means.

These situations remind us that moral systems have limits, and they make us face pressing questions: If such systems fail at some point, which failures are acceptable? Specifically, what are the criteria for establishing protocols for acceptable failures in planning, if one must choose? Answering the first question typically means finding the best-of-the-worst-case scenario, undesired by definition. Still, this question does not escape the possibility of a deontology-versus-utilitarianism impasse. The second question usually leads back to the first, establishing protocols that maximize happiness or promote an absolute duty. Such circumstances force one to choose sides: does one plan for the greater good or for respecting community autonomy? In turn, the morality-in-planning conversation does not completely divert from a circular course.

Critics could object to the way that I categorize the limits of urban planning dilemmas above, arguing that I present a false dichotomy. They could argue that positions such as virtue ethics circumvent a moral binary. Upton (2002), for example, maintains that deontological and utilitarian approaches in planning promote viewing the planning process as a series of isolated incidents, while other moral approaches such as virtue ethics looks at the bigger picture. That is a fair criticism, but I would argue that virtue ethics comes with shortcomings also.[11] In the examples above, I caricaturize moral theory applied to urban planning only to point out its limits. Moral theory can resolve several issues, but it cannot always avoid moral failure. If moral theory cannot eliminate all of the problems that it was designed to address, it seems challenging to think that it can resolve issues that are far beyond its grasp.

To understand precisely how the limits of moral theory can lead to moral failures in planning, let us examine the two sets of limits that hinder planning efforts.[12] These limits belong to two kinds of moral theory, traditional and extensive moral theories (Stone 1972). Traditional moral theory's limits are inherent, and there are two kinds of limits pertaining to traditional theory worth pointing out here. The first variety is straightforward. Philosophers indicate individual limits to a moral theory when raising objections about it. For example, Rawls (2009) criticizes utilitarianism because it does not seriously consider the distinction between persons. Rawls' objection indicates a distinct limit for utilitarianism, namely, that it cannot function as a system without seriously considering the distinction between persons. While utilitarianism has several strengths such as maximizing happiness for a great number of people, adherents to utilitarianism must accept such limits if they want the predictability that comes with its systematic structure. The

[11] For an example of some of issues for virtue ethics, see Louden (1984).
[12] Following the argumentation thus far, if a planner is committed to a moral theory, then they cannot abandon their theory if it leads to a situation that he/she cannot accept. This situation counts as a failure.

other kind of limits concerns the scope of a moral theory, its applicability. That is to say, what the theory can do when systematized to solve 'real-world' issues.

For example, Peter Singer (1975) challenged the broader limits of utilitarianism, calling for non-human animals to count as subjects that should receive moral consideration because they experience pain. He saw that the limits of utilitarianism rested on the assumption that only humans deserved moral consideration, the basis for his charge of "speciesism." He revealed how moving the limits was a legitimate enterprise that allowed philosophers to have meaningful conversations about moral considerations for non-human animals beyond anthropocentric or instrumental arguments. This maneuver counts as moving moral theory forward because it expands the applicability of a moral theory, rather than simply bolstering a position through replying to objections.

While Singer's approach extends the scope of utilitarianism, it remains modest compared to other extensive moral theories. For example, on a grade scale, Hans Jonas (1984, 8), points out some of the limits of all traditional moral theories:

> All previous ethics – whether in the form of issuing direct enjoiners to do and not to do certain things, or in the form of defining principles for such enjoiners, or in the form of establishing the ground of obligation for obeying such principles – has these interconnected tacit premises in common: that the human condition, determined by the nature of man and the nature of things, was given once for all; that the human good on that basis was readily determinable; and that the range of human action and therefore responsibility was narrowly circumscribed.

In the passage above, he is thinking about responsibility for the non-human world, holding that traditional moral theory cannot deal with the impacts of technology. Jonas (1984, 6) argues: "Modern technology has introduced actions of such novel scale, objects, and consequences that the framework of former ethics can no longer contain them." He grounds an unprecedented demand for a moral theory that goes beyond the limits of traditional ones. Jonas (1984, 8) argues:

> And what if the new kind of human action would mean that more than the interest of man alone is to be considered – that our duty extends farther, and the anthropocentric confinement of former ethics no longer holds? It is at least not senseless anymore to ask whether the condition of extrahuman nature, the biosphere as a whole and in its parts, now subject to our power, has become a human trust and has something of a moral claim on us not only for our ulterior sake but for its own and in its own right. If this were the case it would require quite some rethinking in basic principles of ethics. It would mean to seek not only the human good but also the good of things extrahuman, that is, to extend the recognition of 'the ends in themselves' beyond the sphere of man and make the human good include the care for them.

Through arguing that modern technology has changed the nature of human action, he justifies expanding moral consideration in a way that not need to appeal to utilitarian considerations. Jonas simply redefines the conditions for responsible anthropocentrism while revealing a need to amend the canon of moral philosophy with extensive moral theory. Jonas (1984), writing before environmental ethics became an established field, addressed how technology has accumulative effects on the planet, impacts non-humans species, and decreases the quality of life for future generations. Jonas' views anticipate today's calls for sustainability. Arguing that modern technology changed the nature of human action, he reminds us that all actions are subject to moral evaluation, including humankind's use of technology that has effects for global populations, non-human species, ecosystems, and future generations (Jonas 1984).

This notion suggests that infrastructures such as transportation, energy distribution, wastewater treatment facilities, and recycling programs, and landfills remain subject to moral scrutiny. Bringing infrastructure such as these into conversations about morality puts us at the limits of extensive moral systems. We can talk about extending moral consideration beyond anthropocentric concerns to account for humankind's treatment of the non-human world and future generations, but unless one wants to extend consideration to things such as public facilities, we have reached the limits of extensive moral theory. Advancing the conversation beyond this point

requires uncovering additional features of topics such as infrastructure, namely their moral dimensions.

**Complex Moral Assessment in Infrastructure**

Extending moral consideration beyond anthropocentric boundaries requires a justification due to the demands that it puts on people. Environmental philosophers appealed to the intrinsic value of non-human life to defend such positions (Callicott 1989, Hargrove 1992). Applying this line of reasoning to moral arguments that deal with artifacts does not make sense. Objects lack the kind of objective non-anthropocentric intrinsic value that living beings possess, excluding them from coverage under several extensive moral theories (Hargrove 1992). They are not free moral agents, barring much support from traditional approaches. They are not morally considerable in the same sense. We don't need to care for drainage pipes, say, but rather their impacts on present or future people or animals.

Several philosophers of technology, however, agree that artifacts have a kind of agency. Attributing agency to artifacts is supposed to clarify humankind's relationship with technology, going beyond surface-level description to reveal unknown aspects. While this maneuver is attractive, I am unconvinced that it is necessary to hold this view to provide the information that would generate better moral outcomes. Examining some of the major voices within the literature shows why this approach fails at times, where it benefits our understanding, and how it can advance research efforts. For example, initial descriptions of artifacts' agency within the philosophy of technology literature give the impression that philosophers had neglected crucial dimensions of

moral theory. Bruno Latour (1994), for instance, argued that technologies are the "missing masses," unacknowledged moral actors in a network with humans. [13]

Following Latour, similar positions emerged, holding that technology has moral agency in some capacity, and most philosophers of technology agree that artifacts have agency, even though they disagree about its particular attributes (Allenby and Sarewitz 2013). Verbeek (2011), for instance, maintains that artifacts mediate human experience, a co-constitutive relationship between people and devices (Verbeek 2011). Humans create technologies that force, persuade, or seduce people to behave in a desired fashion (Verbeek 2011). Other positions hold that artifacts have a stronger sense of agency. Franssen (2006), for example, assigns moral value to artifacts, claiming that they are normatively good or bad. Elsewhere, I went an additional step beyond Franssen, arguing that technologies have embedded environmental values (Epting 2010).

Contrary to these views, Pitt (2014) argues for technology's value neutrality, focusing on humans' culpability. Brey (2014) sees the benefit of thinking about artifacts as having agency, noting that these positions reveal the substantial presence that technologies have in human life, yet his thinking aligns with Pitt, holding that they overshadow humans' accountability. Brey (2014) argues that we should instead think about technologies as playing moral roles, a view that bypasses the need to bring agency into the conversation and, in turn, keeps human responsibility firmly in view.

He proposes to supplement traditional moral theory that focuses on individual ethics with "structural ethics," an approach that addresses the moral aspects of social and material arrangements, taking stock of the morality of technologies within such arrangements, and extrapolate outcome-based behavior guides (Brey 2014). Artifacts are not acting, but they are

[13] Also, see Winner (1980).

factors that one must consider in moral assessments. Brey's move away from using the language of agency through talking about moral factors shows how one can discuss the moral dimensions of artifacts without wrestling with notions of intentionality, a research area with several other considerations. Through thinking about artifacts as moral factors in an equation wherein only humans are accountable as agents, human responsibility remains firmly in view. While I support his position, it requires fleshing out to see the wealth of knowledge regarding the moral dimensions of infrastructure that a theory such as structural ethics can address. Brey does not recognize that structural ethics can serve as the foundation for making moral assessments that go beyond immediate anthropocentric outcomes. What is more, addressing such issues without complicating matters with intentionality and agency problems can advance our understanding of infrastructure's moral dimensions.

For instance, we can gauge the rightness or wrongness of infrastructure through their outcomes, how they directly effect human populations, non-human species, ecosystems, and future generations. One could hold that focusing on outcomes voids a theory-neutrality stance, making the arguments in this paper rest on consequentialism. Perhaps the focus on outcomes leads one to such an objection, *but highlighting outcomes does not make any claims about how planners should achieve them.* All 'real-world' situations relying on the systemization of moral theory have outcomes. Neglecting to predetermine the means for achieving outcomes preserves the conditions for neutrality, providing common ground for all moral theories to consider using a supplemental measure for required cases. Deontologists, for instance, could hold that outcomes require planners to act as if they were making universal laws while not using people as mere means. A deontological planner must plan according to universal maxims that respect individuals' autonomy from a sense of duty. While the 'real-life' consequences that come with planning in accord with deontology's

requirements do not matter, the manner that they are brought about does matter. If a planner wants to use the guiding structure of deontology for her decisions, she implements infrastructures that promote or do not violate universal maxims.

Proponents of utilitarianism could hold that outcomes should maximize happiness for the greatest number of people. Having this common ground allows adherents to particular moral theories to establish criteria for determining what counts as a moral or immoral outcome. To accommodate adherents of different foundational theories, holding that a moral outcome directly or indirectly reduces or eliminates harm or benefits human populations provides enough common ground for a shared conversation. Deontologists, utilitarians, and virtue ethicists, for instance, can specify the conditions that define a morally beneficial outcome, along with what counts as an immoral outcome. The point here is not to argue for one theory over another, but to indicate that the pattern of beneficial or harmful outcomes is applicable to any moral theory.

These examples illustrate that planners can act in a manner that is consistent with the theory of their preference, and they can extend the underlying pattern of such theories to determine the moral status of outcomes. One can argue that a specific moral theory fares better for gauging the moral status of an infrastructure. This point is reasonable, but it does not undermine the basic pattern behind extending the principles of a moral theory to an infrastructure's effects.

Claiming that outcomes benefitting urban populations are moral and holding that outcomes that harm residents are immoral remains challenging due to the level of complexity involved. Due to the high number of aspects that one must consider when determining the moral status of an infrastructure, one cannot always immediately judge a decision to implement an infrastructure. In some cases, it could take decades to know if an infrastructure harmed a population. Traditional moral theorists did not gear their theories toward assessing the wrongness

or rightness of highly complex moral equations having several agents, people, ecosystems, non-human species, and artifacts. Such cases often have *delayed outcomes*. It is important to emphasize this notion due to its specificity in cases concerning infrastructure.

When assessing an infrastructure, a delayed outcome holds importance because time sensitivity is a feature that is not often present when determining moral status. When introducing an infrastructure to an existing city, its initial presence could be harmless. Over time, however, it could have accumulating harmful effects on public health or local ecosystems. Such conditions are exceptional instances that require examination on a case-by-case basis due to the specialized circumstances surrounding them. This notion suggests that locating highly specific moral absolutes within planning might not be fruitful. Such an idea, however, does not entail moral relativism. It only suggests that finding such absolutes remains challenging because cases can greatly differ. In turn, debating moral absolutes should begin with a discussion about the effects of an infrastructure, followed with an examination of the elements that create its moral status.

By breaking down the functionality of an infrastructure, the moral factors of each feature stand out as benign or harmful. The variables in each moral equation could greatly differ, but the outcomes for populations should have correlative expressions such as public health impacts. For example, interstate highways in the United States are not inherently bad, considering that they facilitate the distribution of goods and services, but several criticisms note their negative impact on urban life (Hamersmaa 2014). In select cases, highway removal projects show that eliminating the highway from the city leads to positive outcomes for residents (City of Seattle 2015). The point here worth emphasizing is that the moral status of an infrastructure hinges upon a different set of circumstances from one case to the next. Incorporating subsurface rail in New York City, for instance, is not the same as implementing a subway in Bogotá, Colombia due to topographical

concerns (Cobb and Acosta 2014). Factoring in delayed outcomes in moral equations shows how complex cases differ from traditional or customary examples. That is not to say that traditional and extensive cases cannot have delayed outcomes, only that they are more common with complex cases.

For example, consider highways in the city. Determining their moral status requires weighing numerous factors against the importance of their function and the available alternatives. Such considerations include traffic fatalities, lengthy commute times, stress, decreased air quality, effects on businesses, walkability and public health, and environmental impacts. In traditional moral theory, this process is not part of how scholars debate moral rightness or wrongness. In turn, we must adjust how we think about these kinds of cases to account for such factors.

Bearing such amendments in mind, assessing infrastructure's moral dimensions requires establishing a vocabulary that correlates with different kinds of planning outcomes. Simple planning issues correlate with traditional moral theory. For example, if a transportation planner engages in some immoral act such as misdirecting funding for light rail allocated for vulnerable populations, obviously he is culpable. Blame is clearly relevant in situations wherein the actions of a person or group are directly responsible for such damages. In other instances wherein intentionality is impossible to prove, but it is evident that a minority population endured injurious effects resulting from planning decisions, arguing that such outcomes are wrong suggests that they suffer *disparate impacts*.[14] They must endure harmful conditions, unlike the majority of residents who do not face such injuries.

Debates about the motivations behind Robert Moses' low bridges in New York City exemplify the notion of disparate impacts in planning outcomes (Winner 1980, Joerges 1999).

[14] For instance, The United States Supreme Court formulated disparate impacts in *Griggs v. Duke Power Co.*, 401 U.S. 424, 91 S.Ct. 849, 28 L.Ed.2d 158 (1971).

Moses' low overpasses would not allow city buses to reach beaches that whites frequented (Winner 1980). Landon Winner (1980) held that Moses intentionally built the bridges to keep black residents away these vacation spots. Bernward Joerges (1999), however, points out several reasons why charges of racism against Moses could be false. These arguments illustrate the power dynamic and intense character of planning decisions, showing how their outcomes significantly carry weight. In instances such as Moses' overpasses, the outcome is immoral, considering that it creates conditions wherein minority residents lack basic access to recreation, equal to whites. Intentionality matters, but proving it is not a necessary condition to say that such outcomes are immoral.

While examples such as the case above are alarming, other harmful outcomes require attention because they blend in as part of urban landscape. Normalized through their mundane character, infrastructure can perpetuate undesired outcomes. Some highways serve as good examples. While they are useful for urban mobility and are not inherently bad, factors such as air pollution that exceed established limits suggest that planners should look for safer alternatives such as mass transit (Balduafa *et al.* 2013). Unlike disparate outcomes, such issues indiscriminately affect most urbanites. Despite affecting vulnerable communities, they injure residents, ecosystems, and future generations. In such instances, planners act in concert with large networks of individuals, businesses, organizations, municipal, state, and national departments.

In addition to known networks such as those above, planners act and react against a backdrop of issues such as historical events and climate change. Roger Paden (2003), for example, argues that Marxism provides an avenue for planners facing the challenges that history presents. Along with ideas from Lewis Mumford and Ebenezer Howard, he highlights the idea that a Marxist critique of socialist utopia offers a direct route to moral planning (Paden 2003). Paden's argument

is significant because it reveals the persistent force of history in current planning practices. He could argue that overcoming historical challenges requires contributions from the canons of philosophy and urban planning. Such notions suggest that planners who make decisions without thinking of historical events lack the necessary scope of thought to contend with forces beyond their immediate grasp. Considering the impact of history on the contemporary planning landscape accounts for only one obstacle; planners have several other dimensions that will affect their moral status of their planning outcomes (Wamslera et al. 2013).

For example, transportation planners and civil engineers must account for the cumulative impacts of the repeated displacements of wildlife when charting new freeways (US EPA 1994). They must think about several environmental aspects of mobility than early planners had to consider (Southern 2006). What is more, it is not a far-fetched idea that one can design a transportation system that benefits human populations, serves vulnerable communities, and considers the non-human world. Yet, planners cannot anticipate additional unforeseen factors that could hinder the efforts of a transportation system, but the system would continue to produce moral outcomes.

Consider recent changes in the operational structure of Bogotá's Rapid Bus Transit (RBT) system, TransMilenio. When Enrique Peñalosa, former mayor of Bogotá, initially implemented TransMilenio, he dramatically reduced traffic-related deaths, reduced crime and environmental pollution, and improved urban mobility and quality of life (Hidalgoa et al. 2013). Mayors following Peñalosa, however, did not share his enthusiasm for transportation, and the system now faces several problems that decrease service quality (Hutchins).

Due to the complexity that stems from the issues described above, assigning blame in such cases is difficult and mostly unnecessary. Yet, such difficulties do not mean that planners' actions

are always benign. Despite lacking ill intentions, injuries happen due to infrastructure. Such injuries require a specialized term to show how such actions do not fit under the categories established for culpable moral agents. Commonly accepted criteria for free moral agency holds that people are responsible if they can reason, judge, tell right from wrong, are expected to act according to moral standards, and are morally responsible for the consequences of their actions (Brey 2014). Considering the degree of complexity surrounding planning decisions as described above, harm resulting from infrastructure could stem from several elements that were not part of the planning behind the decision to implement it, as mentioned above. In turn, such effects do not always fit under commonly accepted requirements for free moral agency.

For instance, anticipated outcomes are not always consistent with the effects of a comprehensive plan or decision-making protocols. In such cases, some of the moral conditions of a planning decision are far too complex for the average planner to include in her assessment. Aside from the notion that planners often work in concert with numerous people and agencies, when thinking about displaced wildlife or preserving an ecosystem, for instance, the planner might not see herself in a moral situation. For a planner tasked with a problem-solving measure, long-term effects might not appear on the moral horizon. Concerns about moral responsibility, then, are not subject to the same conditions required under established frames of free moral agency.

Due to elements such as history, culminating impacts, and unforeseen factors, assigning blame is unwarranted, considering the influences that fall outside of the requirements of free moral agency as described above. Planners remain accountable because it is their job, but they do not deserve moral blame. We need a term that allows us to classify this kind of accountability. Luciano Floridi (2003) uses the phrase, “displaced morality” to talk about moral actions that are the effects of morally neutral or insignificant interactions between free moral agents, artificial agents, or a

mix of both. This term almost works for cases dealing with infrastructure. Yet, it carries commitments to intentionality (discussed earlier) that I want to avoid, and it neglects to account for elements such as history and environment per the examples above.

Such cases require an account of "fragmented accountability," a view holding that planners are accountable for such outcomes without always being morally responsible. Due to the forces beyond the planner's control, moral responsibility fragments such that the degree of responsibility on the planner's part is minimal. In turn, accountability is divorced from culpability in cases similar to those instances discussed above. Despite lacking a moral obligation on the part of planners in cases that concern fragmented accountability, a different kind of moral obligation remains that is evident when thinking about the overarching view of planning decisions. Such a view means that we exam the finer details of such decisions, such as planning for toll roads or mass transit. Such cases are complex, requiring us to go beyond the taxonomy of traditional and extensive moral theories. This degree of complexity does not fit under the categories of traditional or extensive moral theory, which is why we should call them complex moral cases, the kinds of issues that require a traditional moral theory plus a supplemental measure for morally assessing infrastructure.

Producing assessments for complex cases requires developing criteria for determining the full range of effects, including immediate and delayed outcomes. What is more, the aim of developing an approach to complex moral cases rests on achieving a *desired moral outcome*. Achieving a desired moral outcome that is specific to a moral system (deontology, utilitarianism) and sub-system (such as sustainability or resilience) requires assessing infrastructures' outcomes for humans and non-humans. For example, establishing criteria for evaluating the sustainable outcomes in infrastructure requires examining its effects on social, economic, and ecological systems. During the introduction, I said that we do not need another moral theory. Rather,

including a supplemental measure would suffice. To include a supplemental measure, one could employ specific conceptions of sustainability or resilience thinking. The goal is not to champion for a particular moral system or supplemental sub system, only to show how supplemental measures help secure desired moral outcomes in some complex planning decisions. The reason behind adhering to this theory-neutrality is that remaining free of bias lessens the burdens that come with defending a moral system, focusing instead on the overarching applicability of the needed supplemental measure.

For example, a deontologist planner could make decisions regarding infrastructure based on a deontological configuration of resilience thinking. A utilitarian planner could make decisions using a sustainability framework for the best way to implement a new infrastructure. In either case, however, attaining a moral outcome through pairings of moral systems with subsystems would be challenging but possible. Achieving moral outcomes is highly complex when considering the number of variables that must go into complex moral equations. In the next section, I outline some of the necessary considerations that should go into a supplemental measure for securing desired moral outcomes in complex moral cases.

**Toward a Supplemental Measure for Assessing the Moral Dimensions of Infrastructure**

In the introduction to this paper, I argued that urban planners relying on moral theory when implementing sustainable infrastructure do not always secure moral outcomes; that traditional moral theory requires a supplemental measure to reduce system failures that result in immoral outcomes. One can argue that sustainability remains an inchoate interdisciplinary area of study, and that settling on a precise description might not happen. One can also argue that sustainability might succumb to a competing model of environmental efficiency such as resilience thinking or

flourishing. Considering these two points, broadly focusing on the themes that cut across arguments within the sustainability literature and rival approaches such as resilience thinking benefit how we understand the importance of social and environmental concerns for infrastructure. For instance, topics such future generations, natural resources, non-human species, and ecosystems require study, but consideration for today's populations must remain firmly in sight to avoid unfair treatment.

Planners can use these lessons to approach a myriad of infrastructure issues, gauging their moral status through outcomes and, in turn, make moral progress alongside technological advancements. Planners adhering to a specific sub system of sustainability can also consider the effectiveness of their particular approach through moral outcomes, making adjustments on a case-by-case basis. Earlier, I mentioned that searching for moral absolutes in urban planning is mostly a fruitless venture, due to the lack of exact conditions that govern planning decisions and the functionality of infrastructure. A masterplan for Suzhou will not work for Denver, and implementing a subway in Bogotá will not work following Boston's protocols. This point brings up an important consideration: one can argue that aiming for moral outcomes in urban planning is a trans-disciplinary philosophical experiment that relies on interdisciplinary accounts to approach urban issues and super wicked problems.

Here is a brief example. Consider the health impacts of populations living near congested roadways. Studies show that children who live or attend schools within close proximity to busy roads can suffer from chronic respiratory symptoms (Gehring et al. 2002). In such cases, instead of focusing on moral responsibility, the outcome is immoral. Blacktops and Minivans are factors in the morality of urban mobility equation. While doing nothing leaves residents with a bad moral outcome, municipal governments in certain instances can make moral progress through actions

such as reducing auto emissions through implementing alternative means of transit or pushing for state/national policies for fuel-efficient vehicles.

Here is a slightly more complex case. Considering mass transit as an approach to sustainability and a humble contribution to combating the super wicked problem of global climate change, public transit in Portland, Oregon created immoral outcomes for minority populations. Latinos living on the edges of the city, for instance, witnessed bus services decrease, fares increases, and they report that some operators treat them poorly (OPAL 2012). Due to these conditions, vulnerable populations suffer, often spending several hours per day in transit. While these community members do not typically suffer physical harm, lengthy commutes take away needed family time, social responsibilities, and quality-of-life experiences (OPAL 2012). One can argue that long transit times take away from opportunities for personal growth and flourishing, unfavorable actions for moral outcomes. Through actions such as increasing bus service, municipalities can alleviate some of the harmful conditions, improving moral outcomes for the people, non-human ecosystem that benefit from reduced carbon emissions, and future generations who will benefit from conserved resources.

Transforming this line of thinking into a new moral framework begins when one shifts to thinking about infrastructure in terms of it playing a role in moral outcomes. This shift is not significant due to merely focusing on how to extend moral consideration, such as ethicists have argued with the non-human world of life and future generations. It is the particular procedure of assessing that one must scrutinize to reveal how planners can know more about the moral dimensions of design, public facilities, and services.

Instead of only expanding the scope to include “to whom” should planners give moral consideration, the neglected dimension is *how* they should give it. Specifically, the problem lies

with how municipal professionals fail to account for several dimensions of infrastructure when making moral assessments. When dealing with an infrastructure, gaining a clear view of its complete moral impact requires examining the infrastructure as discussed above, but it also means thoroughly investigating the basic materials used. For example, one should investigate the social elements such as labor and justice issues that are tied to the collecting of the materials, ecological impacts made when harvesting materials, along with the energy outputs required to transport, store, and dispose of materials, and how such materials will likely impact future generations. Referring back to the mereological model of city identity, we are dealing with a case of how the parts fit and work together. We are not dealing with a question of taking "more" into account, but it is a concern about "how" they account for "more."

While this list is not exhaustive, it indicates the required mindfulness for producing better moral outcomes. Accounting for the exact nature of the overlooked aspects in urban planning or sustainable urbanization will differ from one case to the next, but they should include topics such as material composition, labor, human rights, energy consumption, durability, and efficiency. This kind of mindfulness goes beyond what Carl Mitcham (1997, 272) calls ''duty plus respicere,'' considering more factors than functionality concerns. It also involves examining the interconnected relationships of materials, capital, labor, environmental impacts, and future generations that relate to such concerns. Through evaluating these aspects of infrastructure as moral factors, the scope of moral assessment expands due to a change in how we morally assess infrastructure.

In terms of how a basic material affects moral outcomes, consider concrete. Concrete is a complete principled arrangement precipitating innumerable moral conundrums. Arguably, researchers have yet to determine its full range of social and ecological impacts. The cement

industry remains one of the top producers of greenhouse gas emissions, contributing to anthropogenic climate change (Worrell et al. 2001). As the base material of a transit system, it creates pollution that harms public health and exacerbates climate change (Worrell et al. 2001). Having highways as the primary mode of transit, most residents must purchase cars, insurance, licenses, fuel, and repairs. In turn, portions of their income must go toward securing the means to travel within the city, for cities lacking public transit, safe bicycle lanes, and walkability. Cities preferring highways to mass transit encourage social isolationism, depression, and deprives residents the opportunity for social exchanges (Miles et al 2012). Highways put residents at risk, resulting in numerous injuries and deaths per year.[15] As the key component in highways, concrete plays a moral role, producing moral outcomes.

However, one can argue that concrete has positive ecological and social values. Consider, for example, that concrete's durability ensures that structures made from it will last over 1000 years (Meyer). Using it in construction makes buildings less susceptible to fire, and specialist are researching way to improve the production process, aiming to improve its environmental footprint (Meyer). It also facilitates urban mobility. The point here is not to rally for or against concrete, only to demonstrate that the basic building materials used to make infrastructures have moral outcomes that differ from one case to the next. Researchers can only determine the moral status of an infrastructure on a case-by-case basis, considering that, for example, some highways might have socially and ecologically positive moral impacts for some cases and the opposite for other cases.

If one can argue that highways have various social and ecological dimensions that effect moral outcomes, one must ask: what are the limits behind this kind of thinking? Do all artifacts

[15] For more information regarding highway related deaths, see http://www-fars.nhtsa.dot.gov/Main/index.aspx. Accessed 4 January 2015.

have such dimensions? Assuming all artifacts have these or similar dimensions, should they count as considerations in the larger moral questions to which they belong? The point in asking such questions is to show that seriously considering the argument that we can advance moral theory through questioning the moral dimensions of public artifacts smuggles in several notions that will open new avenues for research, suggesting that there might be numerous untapped veins of research in value theory.

# CHAPTER 5

# A DIFFERENT TROLLEY PROBLEM: THE LIMITS OF ENVIRONMENTAL JUSTICE AND THE PROMISE OF COMPLEX MORAL ASSESSMENTS FOR TRANSPORTATION INFRASTRUCTURE

Transportation infrastructure tremendously affects the quality of life for urban residents, influences public and mental health, and shapes social relations. Historically, the topic is rich with social and political controversy and the resultant transit systems in the United States cause problems for minority residents and issues for the public. Environmental justice frameworks provide a means to identify and address harms that affect marginalized groups, but environmental justice has limits that cannot account for the mainstream population. To account for this condition, I employ a complex moral assessment measure that provides a way to talk about harms that affect the public.

## Introduction

Harmful conditions such as public health impacts and lengthy commute times that the public endures due to municipal transportation systems are morally reprehensible outcomes. Historically, environmental justice frameworks provide much of the necessary criteria for identifying harms that transit infrastructure causes. To a certain extent, employing an environmental justice framework to determine harm works well, but the limits common to all such frameworks hinder our ability to determine moral wrongs and accountability in all instances. To determine the conditions for such responsibilities, complex moral assessment measures that originate in structural ethics show promise for resolving such issues.

To flesh out the views above, I provide some background details regarding the social and political nature of the current transportation infrastructure in the United States, followed by an account of the harms resulting from this history. In order to assess the character of such injuries, I refer to the environmental justice literature due to its usefulness for addressing transportation justice issues. While such studies help pinpoint how such damages affect marginalized groups and determine blameworthiness (when appropriate), we find that we cannot go beyond the inherent limits of well-established environmental justice frameworks. Having clarified these points, we gain perspective on how we can account for the harms outside of environmental justice using a

complex moral assessment of transportation infrastructure. This measure provides a way to talk about moral responsibility in such instances. In closing, I examine some future areas for research.

**The Historical Roots of our Transportation Crisis**

Long before the 'great streetcar conspiracy' of the 1940's, mass transit in the United States was unstable and episodically scandalous (Schrag 2000). New York City, for example, saw transit battles emerge in the 1920s, revealing that the tensions between bus proponents and streetcar advocates were symptomatic of larger power struggles that often had more to do with regulation and taxes. Controversy surrounding streetcars and buses reached its highest point during the late 1940s when United States' attorneys indicted GM and other corporations and persons involved with National City Lines, due to violations of 1890 Sherman Antitrust Act.[16]

United States' attorneys accused them of conspiring to monopolize transportation and conspiring to monopolize the sales of buses and bus supplies (Slater 1997). The former conspiracy charge did not stick, but a jury convicted them of the latter charge. Despite the legal outcome, popular media in the United States continues a history of portraying the demise of streetcar transportation as the ends of a sinister plot. While the conspiracy theory holding that General Motors (GM) and other companies eviscerated streetcar systems in the United States in an attempt to monopolize the nation's transit makes fantastic entertainment, most transportation scholars dispute such claims (Adler 1991).

They argue that overlooked factors such as the appeal of automobiles, along with economic and practical concerns, led to the combustion engine's reign over American urban mobility. Despite popular opinion among academics, arguments continue to surface that support the great

[16] 186 F.2d 562 United States v. National City Lines, Inc., et al. Nos. 9943-9953.

streetcar scandal (Greenwald 2013). One could argue that such a conspiracy remains convincing because most Americans rely on automobiles, and in turn, they must endure lengthy commutes, along with physical and mental health effects. To understand how holding automobiles and roadways in higher regard than other transit systems leads to the harms described above, I will outline such effects in the following section.

**Roadways in the City**

Having a transit system wherein roadways and automobiles are the dominant form of transit presents at least two kinds of problems.[17] The first kind of problem concerns environmental justice (EJ) cases, involving minority groups or poor residents receiving some form of harm. The second category does not exclude minority groups, but it concerns the public that endures adverse effects, or "public cases." When examining the current state of transportation in the United States, roadway systems require extensive study due to their paramount role in urban mobility, influencing numerous dimensions of residents' lives .

For instance, transportation infrastructure in the United States facilitates commerce and travel needs, but highways in cities often have negative effects. This contrast gives researchers motivation to examine this mode of transit, searching for ways to maintain its strengths yet mitigate harm. One complication is that some transportation problems are part of one's daily routine, typical consequences of urban life. Other issues count as acts of environmental injustice, and the nature of such acts widely varies.

For EJ cases, reliable transportation is one of the primary obstacles that blocks poor people's paths out of poverty (Wachs 2010; Blumenberga and Agrawalb 2014). Surprisingly,

[17] For some background into such issues, see, Illich, I. (1973). Tools for Conviviality. New York: Marion Boyars.

social justice researchers neglect the topic (Martensa, *et al.* 2012). Although the conspiracies above illustrate some moral aspects of municipal governance and ownership of transportation infrastructure, urban mobility problems have far-reaching effects for residents, and some outcomes affect minority residents while several other people benefit from such harms. For instance, suburban commuters outside Atlanta benefit from the highway system, but inner-city minority residents must endure the adverse effects from pollution (Lazarus 2001). Poor residents living near highways in the Bronx visit hospitals for asthma-related illness more than any other group (Maantay 2007). Highway projects in Los Angeles displace minority residents, forcing them from their communities (Garcia and Rubin 2004).

One could argue that having roadways as the dominant means for urban mobility entails that transit engineers and planners must work around them to improve mobility. For example, adding bus rapid transit (BRT) systems in cities such as Bogotá has greatly improved urban mobility, yet bus systems elsewhere are less successful (Hidalgoa *et al*. 2013). In some cases, such as in Portland, Oregon, minority bus riders complain about decreases in service, fare increases, poor treatment from drivers, and often spending several hours per day in transit, taking time away from family obligations, cultural activities, social responsibilities, personal growth, and flourishing (OPAL 2012).

What is more, minority groups that depend on inadequate transit systems lack access to several jobs, cannot access social services, or cannot partake in recreational activities due to scheduling restraints and time conflicts (Deka 2004; Fol and Gallez 2014). Despite such hardships, minority groups must also spend significant amounts of their household income on transportation expenses (Deka 2004). Although these examples above are not an exhaustive list, they illustrate

the kinds of environmental justice issues related to having roadways and automobiles as the principal form of transit while lacking other means of mobility.

For cases affecting the public, several cities lack a feasible alternative to highways and automobiles, making roadway commuters the largest group of workday travelers. In the US, 86 percent of workers drive to their jobs (Winston 2013; McKenzie 2015). While 70 percent of working-age urban dwellers in the US have access to a form of public transit, 39 million lack such services (Tomer *et al*. 2011). For example, in Riverside, California, public transit services can only connect workers with 8 percent of jobs within 90 minutes of travel time, and for residents in Knoxville, Tennessee, transit services only reach 25 percent of jobs (*ibid*.).

Bearing the points above in mind, the impact of commuting on US residents has several drawbacks. In terms of public health, for instance, residents who commute via automobile put themselves at greater risk of obesity (Christain 2012; Hoehner et al. 2012). People who spend more than 90 minutes driving each day are prone to neck and back pain, along with increased anxiety and fatigue (Crabtree 2010). Perhaps one cause of worry is traffic fatalities, considering that numerous people die behind the wheel each year.[18] What is more, commuting via personal vehicle is conducive to social isolation, disconnecting people from social and community structures (Putnam 2001; Miles et al 2012). Aside from personal isolationism, highways indirectly serve as racial barriers that separate groups (Hardin 2015).

While roadways and automobiles have significant effects on human populations, they also affect non-human animals and ecosystems. For instance, roadway construction displaces local animals and highways block migratory animals (Foreman and Alexander 1998). As rainwater moves toward wastewater facilities, it picks up gasoline, oil, heavy metals, and other harmful

[18] For more information regarding highway related deaths, see http://www-fars.nhtsa.dot.gov/Main/index.aspx. Accessed 4 January 2015.

chemicals, affecting flora and fauna (Burton and Pitt 2001). Moreover, we must also consider that the production of concrete, automobile manufacturing, and industrial processes such as oil refining affect ecosystems and non-human species. Although this list is non-exhaustive, it indicates how such harms go beyond the realm of humankind's immediate grasp.

One could argue that other systems also lead to similar if not worse effects, which is a fair criticism. Consider, for instance, that some light rail systems also displace minority residents (Scott 2012). Light rail also separates racial groups, indirectly promoting racial segregation (Hardin 2015). Roadways also have several positive attributes, such as transporting people and goods, and that communities could not have efficient emergency services with them. The point here is not to weigh the pros and cons of this particular transport system or to weigh it against other systems, only to illustrate some of the consequences that it brings. Making such comparisons requires that we assess such damages under established criteria or develop alternative means if necessary. To accomplish such a task, I turn to environmental justice frameworks to evaluate the consequences above in the following sections.

**Identifying Injuries with Environmental Justice Paradigms**

While the above mentioned damages demonstrate that harm remains inevitable for the current arrangement of roadways and vehicles as the dominant transport system in the US, no single established assessment method can adequately determine all kinds of injuries and types of responsibilities. At present, the most common way to talk about harm in transportation cases is through cost-benefit analysis (CBA). Yet, several problems come with employing this approach. First, Matthew Adler (2001) argues that CBA works as works as rough proxy, but that fails when it comes to the distribution of well-being. Giulia Wegner and Unai Pascual (2011a; 2011b) endorse

this point, yet they focus on how CBA also fails to account for several factors of well-being, along with a general neglect for complex ecological considerations, (among others). They explain that people continue to endorse CBA through using it because seems practical, it seems democratic despite fundamentally excluding people, and alleges value-neutrality when realities prove otherwise (Wegner and Pascual 2011b). In addition to these points, a rather extensive literature review from Jones *et al*. (2014, 400) illustrates numerous problematic aspects of CBA:

> CBA has been criticized on many fronts such as its decision making process (Mouter, Annema, & van Wee, 2011), its process (Beukers, Bertolini, & Brommelstroet, 2012), it monetizes non-market goods (Mackie & Preston, 1998; Niemeyer & Spash, 2011), it does not account for equity Banister & Berechman, 2000), the openness of the interpretation of its results (World Bank, 2004), its scrutiny by the public (Persky, 2001), its need for completeness and correctness (Annema Koopmans, & van Wee, 2007), its lack of being understood (Heinzerling & Ackerman, 2002), its ethics (van Wee, 2012) and its discounting of long-term environmental consequences (Ludwig, Brock, & Carpenter, 2005).

Considering all of the problems associated with CBA, one could argue that, as a theoretical or practical approach, it is a total loss. As several of the researchers above note, CBA is a forward-looking enterprise, whereas EJ assessments examine harms that have actually occurred—assumingly as the results of planners who employed a CBA!

Although it seems unlikely that we can rid all possible harm from such infrastructures, categorizing kinds of harms provides a way to approach them on a case-by-case basis, a measure that might produce better outcomes than current practices. Separating the incidents above as EJ cases and public cases suggests that we can appeal to different assessment methods for different injuries and responsibilities. EJ cases, for instance, have a lengthy history and supporting literature, ranging from academic studies to government protocols (Schlosberg 2007). We can use this research to determine specific categories of harm.

Consider, for example, that the United States Environmental Protection Agency's (2015) (EPA) definition of environmental justice requires that people receive just treatment, regardless of skin color, nationality, economic situation, or when developing, implementing, and enforcing laws, regulations, and policies that deal with the environment. Such definitions provide a means to identify basic harm. The EPA's definition holds many of the early ideas from EJ pioneers. Carl Phillips and Ken Sexton (1999) examine several definitions that EJ researchers such as Robert Bullard, Bunyan Bryant, Paul Mohai, and Richard Hofrichter develop. They maintain that the top definitions of EJ have five central dimensions. These accounts define fairness, identify dangers, examine unfairness, locate injured groups, and question the roots of unfairness (Phillips and Sexton 1999).

Despite such benefits, such definitions lack an extensive conceptual framework for comprehending or dealing with additional entailments pertaining to EJ cases. Looking at how EJ frameworks advance over time exhibits that they take on new dimensions, keeping pace with developments in EJ studies and the EJ movement (Schlosberg 2007; 2013). For instance, David Schlosberg (2007; 2013) examines the conceptual frameworks found throughout EJ studies. He demonstrates how several EJ scholars have established positions that go beyond the initial definitions above, making room for identity and political recognition to varying degrees (Schlosberg 2007). Schlosberg (2007) points out that Robert Figueroa is the only person working in EJ who directly studies recognition as an integral aspect of an EJ paradigm.

Figueroa (2005) maintains that abstract redistribution-versus-recognition arguments within justice theory distract us from the concrete lesson that EJ issues teach us about the realities of justice. In turn, EJ studies and policy requires a bivalent approach that includes the practical features of justice theories that can get the job done. One could argue that this element within

Figueroa's work allows his paradigm to address more kinds of EJ cases than other approaches, giving its scope an advantage over earlier frameworks (Figueroa 2006).

Figueroa's position holds that when dealing with certain kinds of EJ cases, definitions such as those above cannot cover all of the relevant and necessary concerns for environmental policy decisions. EJ usually deals with distributive justice, the equal distribution of environmental risks, but it also concerns the people who get to make environmental policy decisions (*ibid.*). According to Figueroa (*ibid.*), we are dealing with an act of environmental injustice when people with power exclude minority groups from decisions about the policies and practices that affect them. Figueroa's paradigm focuses on aspects of distributive justice and political recognition; requires that group and individual identities remain respected; and appreciates traditional beliefs, knowledge, experience, and heritage (*ibid*).

To include more topics under the heading of EJ, Schlosberg (2013) puts forth an approach to expand the kind of cases that we can address under such frameworks. Schlosberg's position includes dimensions covered in Figueroa's paradigm, such as equality in distribution, recognition, and participation. Yet, Schlosberg goes beyond Figueroa, including consideration for the environment itself. He points out that early conceptions of EJ had to justify arguments for urban environmental problems because such issues did not occur in the wilderness, the kind that most people might refer to as "natural." He reminds us that environmental organizations had a tendency of neglecting this point (*ibid.*).

Schlosberg (*ibid.*) notes that overcoming narrow conceptions of environment for EJ cases did not exclude consideration for the non-human world, holding that the EJ movement respects indigenous relationships between the human and non-human worlds (*ibid.*). Citing the developments at the First National People of Color Environmental Leadership Summit in 1991, a

meeting that included African American and rural Native American activists, Schlosberg (2013, 39) notes: "the very first principle of environmental justice affirms the 'sacredness of Mother Earth, ecological unity, and the interdependence of all species.'" To bolster this claim, he references Julian Agyeman's work that reconciles the interests of the natural world with environmental justice to move toward a conception of just sustainability (*ibid.*).

Adding another layer of complexity, he brings in the capabilities approach to account for the basic needs, capabilities, and functioning that gives the approach its appeal and utility (*ibid.*). In order to draw support for his pluralist position, he exhibits how EJ founders engage in pluralistic approaches within EJ (*ibid.*). Other researchers use the pattern of EJ arguments to defend EJ cases on a global level, holding that the pattern of oppression in textbook EJ cases lends itself to the way that certain nations oppress other nations (*ibid.*). Further, Schlosberg (*ibid.*) demonstrates how researchers in climate and food justice rely on the long-standing history of EJ to reinforce arguments. Clearly, he makes a convincing case that researchers can employ the principles of EJ to address a great number of issues.

While Schlosberg extends EJ to cover cases beyond initial conceptions, there should be some reservations about endorsing such a bold maneuver. Through adding considerations for the non-human world, Schlosberg inadvertently smuggles in a complication that I call the *fragmented interest* problem. The basic idea behind the fragmented interest problem holds that developing an EJ framework to account for several dimensions other than justice for minority groups distracts from the essential character of EJ.

Here is a recent analogy from the Black Lives Matter movement. Although I am not introducing this analogy to prove a point per se, the pattern of thinking behind this analogy helps identify the problematic conditions regarding the manner wherein Schlosberg extends EJ to

include nature. For instance, saying "Black Lives Matters" spotlights the problem about violence against African Americans (Butler 2015). Protestors who counter this slogan with "All Lives Matter" diminish the spotlight on African American lives that police haven taken through broadening the scope to include lives that are not subject to the same injustice, appealing to a humanitarian notion instead of directly zeroing in on a serious race issue.

Schlosberg's argument follows a similar pattern. Through including considerations for the non-human world under an EJ framework, he discounts the importance of EJ for the sake of harmed groups. Minorities, then, must share the stage with flora and fauna. In turn, one could argue that such matters lose some of the urgency behind particular charges of environmental injustice. This notion is why the problem is an issue of fragmented interests. We must divvy the focus between the interests of injured people and the (anthropocentrically perceived) interests of harmed non-human life or ecosystems.

One could object to this point, arguing that the harmed groups could have an interest in protecting the interests of nature, a view that Schlosberg endorses (2013). Although I agree with Schlosberg and other EJ pioneers that issues pertaining to cities require consideration under established EJ criteria, such considerations do not always entail that the environment requires consideration. Earlier, I mentioned that Schlosberg argued that indigenous peoples hold the natural environment in high regard, and, in turn, the natural world deserves consideration under an EJ framework.

Although some indigenous people maintain such views, such beliefs are merely coextensive qualities that coincide with an act of environmental injustice. It very well could be the case that an act of environmental injustice could violate indigenous people's culture or heritage, but we must assess such situations on a case-by-case basis, considering that such a condition does

not correlate with all cases. For example, are we to assume that all minorities or indigenous groups hold the environment in high regard? Such a position rests on a generalization wherein all minorities or indigenous groups are the same, a statement that is simply false.

It does not seem plausible that one must consider the "sacredness of Mother Earth, ecological unity, and the interdependence of all species" when arguing about dangerous levels of auto emissions in the Bronx harming minority residents (Schlosberg 2013, 39). Holding that such a proviso belongs within an EJ framework designed to address all EJ issues suggests that minority residents who do not have such beliefs as part of their heritage, culture, or traditional knowledge are now subject to such considerations. Determining if such a proviso belongs within an EJ assessment depends on if it correlates with heritage in the context of a group's environmental identity. For such instances, notions of environmental identity within EJ justify the tedious nature of approaching such issues one case at a time, rather than focusing on the adherence to broad criteria. Figueroa (2006) defines environmental identity as a combination of cultural identities, practices, norms, habits, and perceptions of self that connects the group to a place. If we can determine that a policy decision disrespects this identity, making a case for environmental injustice regarding a particular occurrence stands on solid ground. In other such instances, however, adhering to this criterion remains dubious.

If the argument presented thus far is convincing, we should see that the limits of environmental justice stop short of including considerations for the non-human world, unless such considerations are inextricably linked with a group's environmental identity. The reason why we should not include considerations for the non-human world in EJ cases suggests one reason why we cannot include the public cases listed in the previous section. Let us see what happens if Schlosberg were to replace "nature" with "the public." He could easily include the public, arguing

that indigenous groups hold the public in high regard, along with nature, and that we *ought* to include the public in an EJ framework. If one considers that including elements that do not directly support efforts to prevent or mitigate harm against minority residents lessens the possible impacts of such frameworks, one could argue that such provisos ironically favor injustice. While this view might go too far, it suggests that if a criterion does not evidently support justice efforts, it works against the framework.

This notion supports the idea that the scale used to determine what counts as an EJ case cannot, and *should not*, change. For an EJ framework such as the one above, we cannot go beyond the limits of scale or ratio: the quantitative relation between the minority groups receiving harm must be considerably smaller than the mainstream population. EJ definitions and frameworks only apply to marginalized groups, a notion that is common to all EJ definitions and frameworks examined above that precede Schlosberg's position.

Public cases involving urban transit system violate this scale. In turn, we cannot use environmental justice paradigms to support cases having a significant affects on large segments of the population. To address this concern, recent developments in structural ethics, namely complex moral assessments, provide the necessary structure that allows us to account for the normative impacts of transportation infrastructure. I focus on making this point in the following section.

**Complex Moral Assessments of Transportation Infrastructure**

During the introduction, I argued that employing an EJ framework to determine harm works well, but that the limits of such frameworks impede our ability to determine moral wrongs and accountability for several cases. In the previous section, we saw that EJ has limits, and respecting these limits reminds us why such cases are matters for justice: the fundamental nature of transit

concerns how we ought to live together under a larger governing body that specifies certain conditions of our social arrangements.

Moving beyond these circumstances, we are no longer exclusively dealing with justice. We are assessing actions, and all actions remain subject to moral scrutiny, including the use of transportation infrastructure. For this topic, there are two forms of inquiry. The first kind is for planners and engineers: what type of infrastructure should I design, build, implement, consider, or support? From the residents' position, the question is: 'what kind of transportation should I use?' The most relevant conversation in the literature for addressing the former question comes from philosophers of technology who debate the moral agency of artifacts.

For instance, most philosophers of technology hold that artifacts have a kind of moral agency (Latour 1994; Franssen 2006; Brey 2014; Verbeek 2011, 2014). Maintaining this view is problematic because it involves other philosophic disputes such as intentionality and the scope of agency (Brey 2014). Recent advancements, however, take the conversation in a new direction, providing a way to talk about human responsibility for technology that bypasses the need to deal with such topics. (Pitt 2014; Brey 2014; Author 2015). From this approach, structural ethics emerged (Brey 2014; Author 2015). It focuses on how technologies play a moral role by producing moral outcomes, but responsibility ultimately rests with humans (Brey 2014; Author 2015).

Bearing in mind that 86 percent of US residents drive to work, often enduring lengthy commutes that have negative impacts on health, the structural ethics approach makes it possible to label such results as immoral or moral outcomes. Roadways and vehicles are not moral or immoral devices, but the combined use of them under certain circumstances (too many vehicles driving at the same time) leads to immoral effects. Planners who alleviate such harm produce moral outcomes. Although structural ethics is in an embryonic stage, it shows promise for

delivering the kind of assessments that benefit humanity now and in the future. While EJ frameworks work well in specific instances, approaches within structural ethics can cover the cases that Schlosberg wants to include but cannot.

For example, if there is a need to assess a complex moral case wherein planners or engineers must deal with a multifaceted transportation issue such as implementing sustainable transit, they require a moral system capable of complex assessments. A specific approach that emerges from structural ethics, complex moral assessment (CMA), holds that we can make moral assessments of infrastructure as they affect humans, non-human animals and ecosystems, and future generations (Author 2015). While referring to CMA as a moral system would not be a mistake per se, it makes more sense if it is thought about as a *metasystem*, a term that has become useful in the realm of information technology (IT) (Djavanshir 2014).

For a definition, Reza Djavanshir (2104, 4) explains: "I define the metasystem as a large scale distributed system whose components are enterprise systems that are networked together, by the metasystem's governance mechanism, to accomplish a shared strategic goal." Contextualizing this term for CMA, the pattern behind the above definition shows how a moral system such as deontology works with a subsystem such as sustainability to assess a transportation infrastructure's moral outcome, the shared strategic goal. For CMA, the governance mechanism is the human who puts the moral system and the subsystem together to make a CMA rubric. Considering that each CMA will differ, a person (i.e. engineer, planner, philosopher) must customize the CMA metric.

Tailoring a complex rubric, then, means employing a moral system (deontology, utilitarianism, virtue ethics, care ethics) and extending its criteria for what counts as moral or immoral outcome to systems such as sustainability (resilience thinking) because they include

ecosystems, human populations, and future generations.[19] Each city will have a unique set of circumstances surrounding transportation infrastructure that affect the community (including minority groups), non-human animals, and ecosystems, and that will affect future generations.

Yet, when considering the moral outcomes of an infrastructure, planners and engineers must include aspects such as the environmental impacts of used materials, fair labor considerations when collecting and processing such materials, and possible effects for future generations. (Epting 2015). Through thinking about transportation as an issue that requires CMA, accounting for the moral roles that a transportation infrastructure plays in terms of ecosystems, non-human species, and urban populations is a complicated yet achievable goal.

While this position shows promise, it has challenges. For instance, how does one design a CMA measure that leads to a moral outcome? While a fully fleshed out answer is beyond the scope of this paper, the brief answer is that certain harms arise due to transportation infrastructure. Eliminating such harm is an interdisciplinary undertaking that requires experts from several fields. Consider, for example, the public health problems from earlier that roadways and vehicles promote (i.e. depression, obesity). Mitigating such harm requires knowledge from fields such as medical anthropology, environmental science, and engineering. While conclusions reached through interdisciplinary engagement yield insights regarding a particular transit system, CMA provides guidance for moving toward a moral outcome.

The problem with using a complex moral assessment is that no such ready-made rubric for evaluation exists, and people might resist an approach wherein flexibility is an asset rather than a

[19] One could object, holding that focusing on moral outcomes commits one to consequentialism. In turn, one cannot employ deontology or other approaches that are not consistent with consequentialism. This is not a problem for structural ethics because one can stipulate the conditions for what counts as a moral outcome. For example, a deontologist could declare an action to have a moral outcome only if it does not conflict with the principles of deontology. I discuss this issue at some length in chapter four.

liability. While one could argue that lacking an established metric presents a serious challenge for CMA, the absence of such a metric is necessary. Prefabricated assessment measures go against the nature of complex arrangements. Considering that no two transportation systems are identical, it does not follow that there could be a one-size-fits-all system of moral measurement. For instance, each city has different features such as topography, cultures, weather conditions, geology, political structure, and history. Every transportation infrastructure will require a customized CMA measure to optimize positive outcomes.[20]

Another challenge for structural ethics and CMA is how to pinpoint culpability. In cases wherein a planner or engineering firm misleads the public for financial gain, they are blameworthy. In most other instances, however, planners and engineers are dealing with numerous elements that make assigning blame unnecessary. Their job is to alleviate problems. While it might sound fair to some people, blaming planners for creating highways that have led to social and ecological damage is challenging due to other forces involved in planning decisions such as those elements listed above. One could blame conspirators in the great streetcar scandal for the automobile's reign, but their actions were part of a much larger social and political atmosphere, making 'full-bodied culpability' next to impossible to prove. Instead of engaging in blame, properly categorizing the problem provides a way to understand the moral role that transportation infrastructure plays in urban mobility.

Earlier attempts at labeling similar issues, however, provide little benefit for determining culpability. For example, Luciano Floridi (2003, 728) would refer to such cases as instances of ''displaced morality'' to identify moral actions that come from morally neutral interactions

[20] It is worth pointing out that a CMA should also include a strong participatory element. For an example of how this works, See, Chapter 4.

between humans, artificial agents, or a combination of the two.[21] While this term sounds applicable for cases in structural ethics, it maintains commitments to non-human agency and intentionality that are incompatible with structural ethics. Somewhat recently, other philosophers of technology have made good use of a phrase from political theory, "the problem of many hands," (PMH) a theory holding that due to several actors involved in a decision, one cannot assign blame because adequately identifying the guilty party is too challenging to prove (Thompson 1980; Van de Poel *et al*. 2012).[22]

Although PMH supports the tenet within structural ethics holding that responsibility rests with humans, it cannot account for the affect that history, culture, political systems, ecosystems, topography, weather forces, and the accumulating effects of technology and industry, and now climate change has on transportation infrastructure and its role in moral outcomes. For such cases that involving the elements above, the term fragmented accountability works because it holds that planners and engineers working on particular projects are accountable to the public that they serve or served. Yet, considering the high number of factors involved in such projects, assigning blame for immoral outcomes is unnecessary in most instances.

For today's planners and engineers, they must build around existing transportation infrastructure to produce good outcomes (Paden 2003). For the planner and the engineer, the "different trolley problem" is building or incorporating alternative means such as streetcars or light rail systems into existing transportation systems to produce moral outcomes. While trolley cars have large public appeal, according to Jarrett Walker (2009), they face several challenges that the public and planners neglect to consider. Instead, he argues that buses are more efficient, they

[21] One could argue that I have committed the straw man fallacy through not explaining Floridi's use of displaced morality. However, I am not arguing that he is wrong, only pointing out that term is not a perfect fit.
[22] A similar objection could be made here (see previous footnote), but I am not arguing against PMH, only holding that it is not best term for the case at hand.

quickly transport people, and easily fit into existing infrastructure (Walker 2009). From an engineering perspective, Rodrigo Fernandez (2000) demonstrates that bus-based systems can carry more passengers and can operate for a fraction on the cost of light-rail systems. Bus-based systems, however, have a negative stigma (Hess 2012). Instead, commuters in certain instances show a preference for other systems such as light rail systems (Chinnock *et al*. 2013).

Despite this perception, recent studies show that if municipalities dedicate resources to implementing a Bus Rapid Transit (BRT) system that users find aesthetically pleasing, they can overcome this challenge. Considering that limited transportation mobility plays a paramount role for poor residents working to improve their socio-economic condition, factors that contribute to the lack of transportation options carry significant weight, making this issue a concern for EJ. Yet, considering that inadequate transportation affects numerous people, if planners and engineers approach the problem using a CMA, then they could produce better moral outcomes for all residents and the environment.

At the beginning of this section, I mentioned that there were two moral questions about transportation infrastructure and addressed the first inquiry. The second question is for residents: 'what kind of transportation *should* I use?' While this question might seem rather naïve to some people, it reveals the significance about the restrictions in one's choice of transit. Such limits include a transportation reality wherein roadways and vehicles are the only form of transportation, suggesting that alternative means are not a realistic option. Considering that alternatives to roadways are not feasible for most commuters, claiming that public transit is a viable possibility is a hard sell. For all practical reasons, choice in mobility does not really exist for most people in several cities in the US.

When thinking about moral responsibility for local issues such as poor air quality or wicked problems such as climate change, they are not even marginally blameworthy. Through using public transportation, however, residents do contribute to moral outcomes. This notion puts a greater significance on jobs that transportation planners and engineers undertake. They are not simply providing people with a means to urban mobility. When they provide residents with a means to efficiently travel to work and home in a timely manner, they arguably increase residents' social mobility. In turn, transportation planners and engineers not only alleviate some of the EJ issues from earlier, but they potentially work toward creating just cities.

**Future Areas for Research**

While this essay illustrates the moral significance behind transportation planning and engineering, spotlighting the importance of municipal professionals, it also reveals additional areas of inquiry for urban residents. For instance, regarding the individual's actions, future research could examine the moral issues concerning one's transportation choice. For example, are there moral imperatives behind using public transportation, due to conditions such as global climate change? For an alternative approach, does using mass transit improve a person's moral character or make a person a better environmental citizen?

Considering the previous arguments against including nature into EJ frameworks that focused on issues of scale and ratio, additional research could examine if there is a need to develop an approach to environmental justice that inverts the scale. Turning the ratio of environmental justice cases upside down could account for cases involving a relatively small party causing environmental harm to a significantly large group, perhaps in the millions or billions of people. For example, might researchers make a case that parties involved in the great streetcar scandal or

OPEC could stand accused of committing acts of environmental injustice on the planet's populations due to harmful effects on human health?

Regarding the canon of moral theory, this paper demonstrates the first instance with an appeal to a moral metasystem. Although the appeal to this notion served only an isolated purpose, it seems challenging to hold that the limits of this approach rest with addressing issues in transportation infrastructure. Surely, similar approaches or other metasystemic formulations that follow a similar pattern could help us understand complex issues in areas such as the ethics of ecological restoration or species de-extinction, bioethics, and artificial intelligence.

# CHAPTER 6

# INTRA-DISCIPLINARY RESEARCH AS PROGRESS IN PHILOSOPHY

Philosophy of the city has recently emerged as a new subfield, garnering global interest. While most inquiries in this area have 'the city' or an urban issue as common ground, particular approaches engage in a kind of study identified as 'intra-disciplinary research.' Similar to the structure of an interdisciplinary approach, it combines different subfields from philosophy to address problems that cut across disciplinary boundaries. A close examination reveals that this practice challenges assumptions about how the discipline advances. Instead of thinking about definitively answering philosophical questions as the only path to progress, another route combines research strengths from various subfields. Engaging in this process not only adds to philosophy's set of methods, but it also benefits people working on urban issues outside of the discipline. Such an approach is mostly consistent with Carlo Cellucci's heuristic view; a position that he argues is the hallmark of fruitful inquiry.

## Introduction

Although the city is a recurrent topic in philosophy's history, most contemporary philosophers neglect it (Cunningham 2007). Environmental philosophers have been emphasizing this point for years, urging their fellows to pay attention to urban issues (Gunn 1998; King 2000; Light 2001; de–Shalit 2003; Kirkman 2004). Andrew Light (2001), for example, points out that environmental ethicists view cities as antagonistic to nature, a leading cause of anthropogenic degradation. Considering that cities expend resources from the non-human world, approaching the city from an ecologically aware point of view makes sense, but the city is about more than the environment. Discussions about the city involve capital, power, democracy, technology, gender, morality, and justice, among others. Lessons from environmental philosophy add to discussions in philosophy of the city (POTC), but only as one contributing voice among many.

Attaining a thorough, philosophic understanding of the city or an urban affair often requires that research must come from two or more branches or subfields in philosophy. While this routine

appears normal, it counts as a new kind of research. This approach advances the discipline through 'intra-disciplinary' scholarship, a method that focuses on interrelated interests within philosophy's fields and subfields. Revealing how intra-disciplinary approaches are a specific kind of research that challenges assumptions about progress in philosophy is the primary motivation behind this paper. This advancement strengthens the reciprocity between philosophy and the academy, providing new avenues for scholarship.

To illustrate these points, this paper has the following configuration. First, I provide some background on the emergence of POTC, showing how it counts as a traditional subfield. Second, I examine the structure and benefits of interdisciplinary research. Through comparing the patterns behind interdisciplinary and intra-disciplinary approaches, we understand how intra-disciplinary works differ from customary models, counting as a progress for philosophy. Lastly, I explore how such progress bolsters research in fields outside of philosophy and remains mostly consistent with Carlo Cellucci's heuristic view, a position that he argues is the hallmark of fruitful inquiry (2014).

**The Disciplinary Structure of Philosophy of the City**

The range of topics within philosophy has progressed from the main branches of epistemology, logic, metaphysics, and value theory into several subfields such as philosophy of technology, philosophy of biology, and philosophy of law. In these subfields, the 'of' in 'philosophy of X' implies something like 'examining X's fundamental nature and elements,' or 'the epistemological, metaphysical, ethical, and aesthetic concerns of a subject.' For revealing the philosophical dimensions of the city, such notions apply. In terms of its disciplinary direction, POTC resembles other subfields, following the course that philosophers chart for it through arguing in the literature.

Similar to most areas in the discipline, a philosopher of the city aims to reveal an accurate understanding of the city or an aspect of urban life. She formulates questions that problematize the city so that fleshing out the answers provides a clearer understanding of how things are beyond initial observance. Using philosophy to expose a presupposition about the city or a particular dimension of urban life illustrates how this subfield follows the customary pattern found in the main branches and other 'philosophy-of' areas. In this regard, POTC remains straightforward. Standard questions, for instance, include concerns about the character of the city, the city's relationship to nature, what makes a just city, among others. Contemporary inquiries delve into concerns about housing as a public good, democracy and smart infrastructure, and decolonizing cities (POTC Research Group 2015). Arguments that address such concerns count as disciplinary progress, the standard approach, considering that POTC adds to the discipline's wealth.

The above approach to POTC does not directly challenge views holding that there is not progress in philosophy or that progress is even possible. For instance, Kai Neilson (1987) holds that philosophy fails to produce anything that qualifies as philosophical knowledge. Vladmir V. Mironov (2013) argues that philosophy does not advance, but rather philosophers continually provide new interpretations of classic problems. Eric Dietrich (2011) gives us a stronger version of this position, holding that philosophy has not made any progress throughout its history; philosophers suffer from mental illness when thinking that their work counts as progress.

My point is not to directly argue against such views per se, but it is worth pointing out that they assume that the only way to advance the discipline is to find definitive answers for classic philosophical questions (free will, existence of God, etc.). Arguing that philosophy progresses in various ways, David Chalmers (2015) takes the conversation in a different direction, asking why we do not have more progress in philosophy. Within his inquiry, he points out there are other ways

to make progress, such as new methods of philosophical practice, citing recent advances in experimental philosophy (*ibid*.). Despite such optimism, he has reservations about making progress through reaching a consensus on classical philosophical problems (*ibid*).

While I agree with Chalmers' idea that new methods could lead to progress, I am also sympathetic to Mironov's point that philosophers continually provide new interpretations of timeless problems. Showing how these views are compatible means highlighting two different senses of 'progress.' For Mironov, we can infer that he considers progress to count as conclusively answering philosophical questions. Chalmers (*ibid*.), however, considers that formulating innovative ways to ask better questions qualifies as a form of progress. The difference here is that the conception of progress, according to Mironov, remains narrow. One could argue that this limited view of progress is arbitrary, undermining the importance of framing precise inquires.

For philosophers asking any research question, discovering that the answer has problematic elements suggests a mistake in reasoning. Considering the notion that philosophic enterprise is about formulating good questions and providing substantive answers, strengthening the former should count as advancement. Maintaining that headway for the latter is the only path to progress does not suggest that adherents to this position cannot make progress. Yet, it does discount the process that composes a substantive portion of the philosophical experience. Considering that there are several ways to frame an issue, it is challenging to argue that the way that one shapes a question will not have a bearing on the possible answers. What is more, one can hold that if a philosopher refines her question, she could find a better answer. While there is not anything inherently wrong with the attitude that only definitive answers count as progress, discounting such important aspects regarding how one forms an inquiry does not encourage researchers to consider that the shape (or the scope) of the question could be part of the problem or the exact problem itself.

For Chalmers, his account includes aspects that help us proactively work toward answers. In line with his view, philosophers of the city make unique contributions to philosophy's set of methods. Through developing new methodological approaches such as intra-disciplinary inquiries, they advance the discipline in a manner that is consistent with Chalmers' position above. To illustrate this point, the section below examines the pattern behind interdisciplinary research questions. Juxtaposing this pattern with the structure of some inquiries in POTC shows how intra-disciplinary approaches count as a form of progress.

**Alternatives to Traditional Disciplinary Progress**

While wrestling with research questions in urban planning, Horst W. J. Rittel and Melvin M. Webber (1973) coined the term "wicked problem" to describe complex issues wherein researchers lack sufficient knowledge about the nature of problems that involve several interconnected elements, along with social and institutional uncertainties. Within academia, scholars addressing wicked problems are turning to interdisciplinary research methods to understand such problems. (Butkus and Kolmes 2011). One could argue that interdisciplinary scholars prove that traditional research models are not the best way to produce new, useful knowledge.

For instance, one aim of interdisciplinary work is to expose more dimensions of a problem than researchers could uncover working through traditional means (Klein 1990; Butkus and Kolmes 2011). Gaining this view starts when a scholar or group brings two or more fields together to deal with a complex issue using techniques from each discipline (Rhoten and Pfirman 2007). This kind of research reveals that the initial research question is also an instrument for telling us more about the world than previously anticipated. This 'more' accounts for the array of results that interdisciplinary research provides, including predictable and surprising outcomes. Such

approaches offer insights into the quality of knowledge that comes from each field involved in a research project, providing testing grounds for the soundness of disciplinary tenets. If research leads to unexpected outcomes when applying theory to practice, then scholars could come to realize that they need to reconsider established beliefs.

Alternatively, if they find consistency between theory and practice, then researchers gain a greater degree of accuracy concerning a discipline's foundation. Such accuracy makes interdisciplinary approaches better prepared to address complicated issues that require expert training (Khagram et al. 2010). It also exhibits that bringing disciplines together can lead to socially applicable knowledge, perhaps signifying a change in the future of research protocols and customs. Being aware of complex challenges and wicked problems facing the world today, employing research practices with the benefits of having 'real-world' outcomes is an added benefit. Researchers in Brazil, for instance, have had success dealing with ecological problems using interdisciplinary approaches. The Brazilian government endorses interdisciplinary practices, making them a priority for research (Fearnside 2010).

Considering that philosophy now has a wide span of research topics, along with a lengthy history, a similar pattern emerges that resembles interdisciplinary approaches. When a philosopher brings two or more subfields together to deal with a complex topic, one could argue that she gains an enhanced view of the problem. Employing two subfields to deal with a complex urban issue means that any progress made will rest on two different strands of research history in philosophy.[23] In turn, this kind of progress combines arguments that originate at different times and places within the literature. Due to its anachronistic and displaced nature, Fedor Girenok (2013) refers to this

[23] There are also cases wherein philosophers could engage in intra-disciplinary research that includes interdisciplinary efforts. While such cases add an additional layer of complexity, they do not distract from the intra-disciplinary character of such problems. It is possible that other complication would arise due to this aspect, but such cases are beyond the scope of this paper.

kind of progress as polydiscoursive, meaning that it comes from many areas of study, noting that theoretical research does not always follow a straight path. In an article published elsewhere, I provided an example that (in hindsight) fits such a description:

> Considering mass transit as an approach to sustainability and a humble contribution to combating the super wicked problem of global climate change, public transit in Portland, Oregon created immoral outcomes for minority populations. Latinos living on the edges of the city, for instance, witnessed bus services decrease, fare increases, and they report that some operators treat them poorly (OPAL 2012). Due to these conditions, vulnerable populations suffer, often spending several hours per day in transit. While these community members do not typically suffer physical harm, lengthy commutes take away needed family time, social responsibilities, and quality-of-life experiences (OPAL 2012). One can argue that long transit times take away from opportunities for personal growth and flourishing, unfavorable actions for moral outcomes. Through actions such as increasing bus service, municipalities can alleviate some of the harmful conditions, improving moral outcomes for the people, non-human ecosystems that benefit from reduced carbon emissions, and future generations who will benefit from conserved resources (Citation withheld for blind review).

Within the passage above, the problem of using mass transit as a means for combating global climate change requires that we ground such an approach in several philosophical research areas. For example, (1) one could argue that holding that municipalities should alleviate harmful conditions to improve moral outcomes is a utilitarian argument. (2) Combatting global climate change as part of sustainability and considering non-human ecological systems often requires an eco-centric defense, a position in environmental ethics (Callicott 1989). (3) Accounting for future generations means that one must reference scholars working on the non-identity problem (Parfit 1982). (4) Not harming marginalized groups finds support in the environmental justice literature (Figueroa 2006). (5) Technologies, including vehicles, mediate our behavior and should be designed as such, a common view that philosophers of technology maintain (Brey 2014). While examining the congruency of the beliefs in (1), (2), (3), (4), and (5) are beyond the goals of this paper, this case illustrates that accounting for all of the ethical considerations for sustainable transit

requires insights from several subfields such as moral theory, analytic metaphysics, environmental philosophy, and philosophy of technology.

Considering that the subfields above are areas within philosophy, relying on them to understand a complicated issue such as implementing sustainable transit counts as intra-disciplinary research. Stacking this methodology next to interdisciplinary work, the pattern behind them is quite similar. While moral theory, environmental justice, environmental ethics, and philosophy of technology have their own positions and technical vocabularies, combining these attributes gives philosophers a better view of the moral considerations required for addressing complex cases. In turn, we can categorize them as polydiscoursive intra-disciplinary (PI) approaches.

Similar to interdisciplinary research, the hope is that combining strengths from subfields will uncover aspects of problems that individual subfields cannot reveal. While the primary benefit is increasing the quality of knowledge regarding the city and urban issues, there are indirect benefits for interdisciplinary research topics. In the passage above, for instance, transportation planners appealing to the moral and justice dimensions of this argument could discover an overlooked tension between human and environmental systems. Relying on moral theory to mitigate such problems counts as an additional benefit of employing such an approach. What is more, in a manner similar to interdisciplinary work in Brazil, if PI arguments increase the quality of knowledge about cities and urban issues, organizations in the US and other countries could fund relevant studies that could make cities healthier places to live and flourish.

A possible problem for using PI approaches concerns indirect philosophical commitments that remain embedded in complex moral or other philosophic positions. Relying on such positions to build an argument would endorse unknown commitments that might conflict with other views

in the argument. In turn, these commitments might cause unforeseen problems. Recall the reference to environmental philosophy during the introduction. Environmental philosophy faces several criticisms that could be problematic for philosophers using them to support PI arguments.

For example, Ramaehandra Guha (1989) criticizes positions in environmental ethics such as deep ecology, holding that debates within the literature promote imperialism. Eugene Hargrove (2001) argues that the subfield of environmental ethics has largely ignored issues in the literature such as environmental racism, arguing that several philosophers instead focus on topics such as the protection of ecosystems and non-human animals. Bill Lawson (2001) takes environmental philosopher Dale Jamison to task, pointing out that his early work on urban environments neglects the plight of the urban poor. Charles W. Mills (2001) argues that environmental inquires fail to account for the political nature of race and place. These arguments illustrate that individual subfields often, by virtue of concentrating on some problems, unintentionally neglect other issues.

My point here is not to censure environmental philosophy. The motivation behind listing some of the problems in the environmental ethics literature is to point out that researchers engaged in PI research are at risk of unintentionally smuggling such shortcomings into their arguments. In turn, they should exercise discretion when employing theoretical devices, specific vocabularies, or specialized positions when building PI arguments. Due to the added benefit of employing research from two or more areas to address a complex urban issue, one could argue that the prospect of gaining insights into such problems outweigh the risk of carrying over unwanted commitments, holding that additional research or peer review could detect problematic commitments. Nevertheless, PI approaches could greatly vary, drawing on any combination of branches or subfields, creating challenging conditions for developing research protocols. Although this condition reveals difficulties, it does not entail the impossibility of developing such protocols.

One could question the originality of the PI approach, holding that other areas such as bioethics or neurophilosophy could also include PI arguments, benefiting interdisciplinary research inquiries. While that criticism is fair, it does not eliminate the claim that such arguments result from the progression of philosophical research. On the contrary, this concern supports claims about the emergence of PI arguments through providing additional examples of their development. Examining several developing subfields could indicate that there is an increasing change in how contemporary philosophers address research questions. While such an undertaking is outside the purview of this paper, there are further implications concerning how PI arguments affect professional philosophy and the academy. I address these topics in the following section.

**Philosophy of the City and the Heuristic View**

Current discussions about the state of academic philosophy abound with several criticisms that address its present esoteric character, along with advice for remedies. (Kitcher 2011; Frodeman, Briggle, and Holbrook 2012; Frodeman 2013; Baumann 2013). For example, Phillip Kitcher (2011) argues that the main branches of philosophy no longer account for the bulk of research in the discipline. He suggests that philosophers should focus on the "philosophy of" areas, engaging in interdisciplinary affairs. In his critique of Kitcher, Peter Baumann (2013) holds that most professional philosophy is boring; arguing that philosophers parade previously used material as new publications. Yet, he suspects that no one even bothers to read such articles (*ibid*.). He barely stops short of calling for an investigation into dubious publishing practices, implying that cronyism is afoot (*ibid*). Robert Frodeman (2013) argues that philosophers should take /bureaucratic roles outside of academia. Adam Briggle (*et al*. 2012; 2015) exhibits how philosophers can address real-

world issues through engaging in 'field philosophy,' an orientation to research that requires philosophers to directly examine problems in the world.

One could argue that the criticisms and the alternatives above exhibit that academic philosophy might gain from a social reorientation and, in turn, yield new incentives and directions for research. To varying degrees, POTC intersects with the points above, but they are not conducive to showing how PI arguments qualify as progress. On this note, Cellucci's 'heuristic view,' establishes criteria for what defines a fruitful enterprise in philosophy, and this view stacks up well against PI approaches, illustrating how they count as headway (Cellucci 2014). Through providing guidelines that identify philosophy that is progressive, he gives the progress-in-philosophy conversation a broad focal point for philosophers of all stripes to employ, providing a means to recognize philosophy that complements other disciplines and society. For instance, he argues that fruitful philosophy is continuous with the sciences, makes use of the results of scientific discovery, and strives to obtain a global perspective (*ibid*.).[24]

Considering that PI arguments emerge from different philosophic research strands, their composition must contain at least two views. By virtue of this fact, they contribute to the formation of a global view. In the example above that addresses sustainable mass transit, for example, we saw that such arguments can come from five different research areas. PI arguments, then, are conducive to forming a global perspective. In the same manner that philosophers can employ research from outside of their discipline, researchers across the university can employ PI arguments to support research about the city or an urban issue.

[24] Although he gives fifteen indicators of fruitful philosophy, exhibiting how PI arguments satisfy these specific criteria could suggest a fruitful character. For more information, see Cellucci, C. (2014) Rethinking Philosophy, *Philosophia*, 43: 271–288.

Considering Luis Bettencourt and Geoffrey West (*et al*. 2007; 2010) research mentioned earlier, they develop a 'science of the city' to help urban planners address problems that arise from population increases. Although such dimensions fall outside of physics' territory, philosophers can provide needed normative assessments. In turn, philosophers can contribute to a grand theory of urban sustainability while supporting the disciplines' place in the world.

For instance, today's cities face several challenges: rapid urbanization, vast social inequalities, resource scarcity, and climate change impacts, to name a few. A science of the city can produce information about the problems above, but it does not provide any guidelines for how municipalities *ought* to deal with such issues. Considering that the manner wherein municipal practitioners address such concerns remains subject to moral scrutiny, one can argue that the need for philosophy is paramount. As such, a philosophy of the city benefits a science of the city. The relationship between philosophy and science as described above suggests that relationships between philosophy and other disciplines are possible. Such reciprocal exchanges could also make philosophy fruitful, due to the production of new knowledge.

In addition to keeping philosophy continuous with science and making good use of its results, philosophy must also aim for a global view. For instance, Cellucci argues (*ibid*., 274):

> Classical analytic philosophy adopts the Socratic method of questions and answers, but preserves only its outward form, not the substance, that is, the serious search for answers to general questions. There is no evidence that a minute work on sectorial questions may lead to what is essential. On the contrary, philosophy must not be limited to sectorial questions but must give a global view. As Plato says, "anyone who can have a global view is a philosopher, and anyone who can't isn't."
> (Plato, Republic, VII 537 c 7).

Although Cellucci leaves the reader guessing about the exact definition of a global view, one can suppose that it is more-or-less synonymous with a view that is not limited to one particular position or school of thought. Despite the challenges to knowing the entailments of a global view, we can

infer that such an outlook requires that philosophers of the city reconcile new discoveries about the city or urban issues with other accounts within the discipline, views in the university, and social perspectives. They must examine how discoveries geared toward answering sectorial questions can challenge or complement existing knowledge.

During the comparison between interdisciplinary and intra-disciplinary research, I argued that interdisciplinary findings can support or call into question basic disciplinary tenets. The same notion applies to PI arguments. They rely on research that comes from several distinct philosophical areas, involving several sectorial questions. One could argue that bringing several of these sectorial questions together to deal with a PI question increases the likeliness of obtaining a global view, rather than relying only on one philosophical research strand. The hope is that engaging is this kind of research leads to new forms of knowledge, giving philosophers and researchers across the university new directions for exploration.

**Future Directions for Research**

Although Cellucci's indicators for fruitful philosophy show how the discipline has academic and social value, including the social sciences could improve research efforts for other urban affairs. For example, within a grand theory of urban sustainability, human geographers such as David Harvey (2008) and Neil Smith (1986) could contribute to a global view through illustrating how forces such as capitalism shape cities. Such insights provide the necessary bridge between theoretical and applied research, giving philosophers examples that support normative and justice arguments.

For example, Harvey's work deals with residents' right to participate in selecting the kind of city that fits their needs while Smith argues that gentrification makes such rights available only

to elite individuals (Harvey 2008; Smith 1986). Philosophers could engage in research projects that elucidate how Bettencourt and West's discoveries about the general regularities of urban growth intersect with injustices that Harvey and Smith illustrate. In turn, they could reveal how cites ontologically have identities and examine the normative issues that remain entangled in such processes, producing new veins of socially applicable philosophy.

Through using philosophy to make moral assessments of scientific results and established views in the social sciences, urban planners gain a well-researched perspective. Through employing this information, one could argue that they are better prepared to make decisions about how to create cities that support human flourishing. Although such benefits typically fall outside of most academic norms, as we saw with interdisciplinary approaches to environmental research in Brazil, a future direction could involve philosophers using PI arguments to work with municipalities on urban projects, perhaps signaling another shift in research practices.

# CHAPTER 7

# EPILOGUE

In this dissertation, I have argued that contemporary philosophers have neglected to seriously deal with the concept of city identity. Throughout the history of the discipline, other areas such a personal identity receives numerous considerations, along with the concept of identity as an abstraction. For example, there is a bounty of research addressing problems pertaining to how objects retain an identity over time and claims about identity in general. While one could argue that cities are not any different that any other object, such an account fails to consider that a city's dynamic nature makes it dissimilar to most other things. To illustrate this point, I develop a position called dynamic composition as identity theory that provides a framework for understanding the identity of a city, exhibiting that views within analytic metaphysics wrongly

assume that such standards apply to all cases. This position holds that a city's identity is all of the parts that it has at any given time, how such parts fit and work together, bearing in mind that those parts constantly change. Herein lies the connection to justice: certain arrangements of parts (too many cars on roads next to minority communities), missing parts (unequal distribution of public services), or too many of the wrong parts (too much pollution concentrated in a certain neighborhood) lead to unjust arrangements, and they are parts of a city's identity. Depending on the distribution and arrangement of parts, different people or groups of people will have different experiences of a city's identity.

The reason why this issue is important for contemporary philosophy in the world is due to the complex nature of a city's identity and the numerous justice and ethical issues that are tied to a city's identity. There is an abundance of research in numerous fields that address such injustice, but not a single philosopher has taken the task of engaging with the concept of city identity, a concept that fundamentally underpins arguments about injustices that change a city's identity. The point of figuring out a way to talk about city identity is to determine what kinds of cities exist. While establishing such criteria is a daunting task, developing criteria for determining the foundational structure of a city's identity is the first step. Existence proceeds essence, even for cities, and we must account for the conditions that underlie a city's identity being before we can talk about the characteristics that make it just or unjust.

After establishing dynamic theory of identity to account for city identity, I use an applied mereology to develop a model of city identity that shows how the parts of a city fit together to form a compete city. This model provides a way to identity how incongruence between a city's parts can cause problems for residents' wellbeing that include justice dimensions. While this approach has a philosophical dimension that should interest some researchers, a significant benefit

concerns how we can use this approach to build on recent advancements by physicists Luis Bettencourt and Geoffrey West. For instance, they argue that when cities grow, we can expect to see patterns emerge that reveal general principles for about how a city changes. Despite such advancements, their insights are difficult to implement, and an applied mereology of the city helps with such an endeavor. What is more, they neglect to consider that such issues are moral concerns, and I show problems of urban growth can be morally troublesome, making suggestions for how to improve cases that concern infrastructure.

To understand the moral dimensions of infrastructure, I argue that moral theory alone is ill prepared to adequately demonstrate its full range of effects. Yet, instead of developing another moral theory, we can supplement moral system with a non-philosophical subsystem such as sustainability or resilience thinking to account for the elements that traditional moral systems neglect. This position comes from the nascent research area, "structural ethics." Building onto recent literature, I develop a measure called "complex moral assessment" that lets us evaluate the moral status of an infrastructure to improve a city's living conditions. Through engaging in such actions, planners and engineers can create living conditions that favor human flourishing so that it is a more just place for residents. Such actions change a city's identity. Bearing in mind that I argue that a city is all of the parts that it has at a given time, along with the constant interchange of parts, each time wherein a planner adds a part that promotes social justice, mitigates harm, or secures the conditions for human flourishing, they change a city's identity.

Through using transportation infrastructure as an example in chapter five, I exhibit how the notion of complex moral assessments developed in chapter four can account for two issues surrounding how we address transportation infrastructure issues. The first issue is environmental justice (EJ). Although EJ frameworks can solve EJ problems, we cannot (and should not) use them

to wrestle with questions concerning the moral nature of issues that affect the public, non-human nature, or ecosystems. Attempting to engage in such practices commits the problem of fragmented interests, an issue holding that we minimize the interests' of minority groups when considering the interests of other entities such as non-human nature or the public alongside marginalized groups. Instead of using EJ frameworks, I argue that we can employ complex moral assessments to account for such problems.

To conclude the dissertation, I reveal how the one of the research methods employed in the dissertation counts as a unique kind of progress in philosophy. For instance, to make several of the arguments, I had to use research strands from many sub fields in philosophy, i.e. environmental ethics, philosophy of technology, and analytic metaphysics. Considering that I remain within the disciplinary boundaries of philosophy, this kind of research counts as "intra-disciplinary" research, a method that bears resemblance to interdisciplinary research, but only uses interdisciplinary research as an auxiliary measure when appropriate.

As these chapters stand, one can read them individually and they should make sense, or one can seamlessly read them as collection. One reason behind this approach rests on the idea that each chapter represents a research strand. Consider, for instance, that city identity as a concept has several dimensions that I could not cover. Although she does not engage with "city identity" as a metaphysical concept, Iris Marion Young argues that different groups of people know the same city differently. From my position, there is only one city identity. My stance is that both views are not only compatible, but they are complementary. Fleshing out this point, however, will require much effort.

In terms of the moral dimension of infrastructure, including but not limited to transportation issues, developing a complex moral assessment of an infrastructure in a specific city

will illustrate the utility in such a measure. What is more, there should be substantial attention to exploring the idea that philosophers can develop metasystems to deal with wicked and super wicked problems.

When I began researching the questions found in this dissertation, I quipped, “is there a need for a new philosophy, a new philosophy of the city?”—a question that shows my environmental ethics roots due to a ground breaking paper by Richard Sylvan, “Is There a Need for a New Ethic, a New Environmental Ethic?” Although numerous environmental issues require research to combat anthropogenic climate change, this dissertation demonstrates that another approach for dealing with environmental issue is to change how cities use resources from the non-urban world. To answer my question, “yes.” There is the need for a new philosophy, a new philosophy of the city to address such problems, and this dissertation counts as one humble addition to the much-needed efforts.

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