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Technical communication in place-making professions: Exploring the network pictures of urban designers

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TECHNICAL COMMUNICATION IN PLACE-MAKING PROFESSIONS:

EXPLORING THE NETWORK PICTURES OF URBAN DESIGNERS

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I dedicate this work to my parents who struggled through numerous hardships to survive as immigrants in the United States and to ensure I received a good education. They continue to amaze me.

And to Jeffrey Koppmann whose belief in me never wavered.

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ABSTRACT

Sanchez, Fernando. Ph.D., Purdue University, May 2015. Technical Communication in Place-Making Professions: Exploring the Network Pictures of Urban Designers. Major Professor: Patricia Sullivan.

This dissertation addresses how professional writing as a field can pay attention to broader definitions of design in order to help further conversations of spatial justice (the act of helping to promote equity in matters of development in urban spaces). I begin by noting the conversations that have circulated regarding the relationship between urban design and rhetoric, noting that professional writing can help add a unique lens to the conversation. The second chapter provides an overview of how design is discussed in technical communication scholarship. Here, I showcase how most of these discussions regarding research in design have centered on textual documents and also provide a model that bridges the different roles that researchers in technical communication have taken on when studying such artifacts. In short, these roles have included acting as Observers, Testers, Critics, Creators, and Consultants. In chapter 3, I provide a brief overview of the field of urban design—the field interested in the design of cities. Having a better understanding of the history of and current controversies in urban design, I discuss the methods and results of my empirical study in which I track the influences that urban design paraprofessionals rely on as the design in hopes of gaining a better

understanding of how they view public, private, and nonhuman actors within their particular contexts.

I end this project with a pedagogical proposal in which students in technical writing courses can come to learn more about tackling wicked design problems. In this way, civil engineers and other students interested in city and spatial design can better see the ways in which their designs require the input of local stakeholders and the problems that can arise from taking on top-down design decisions.

CHAPTER 1. INTRODUCTION

1.1   Introduction

Recently, scholars in Rhetoric and Composition have turned their attention to urban

spaces as sites of pedagogical and research interventions. Richard Marback (2003), for

example, focusses on the stories we tell about cities and how those stories have rhetorical

power in communicating a place. "We can never walk into a cityscape," he writes, "that

has not already been inscribed by others and that is not always already inscribed by us" (p.

143). For it is in speaking of the city that the city is transformed—both affectively and

materially. The work of planning, according to Marback, involves listening to and

speaking of space in order to change their aspects into something new—something

different. But the text of a city can also be written by its residents, mixing the object and

the user in a rhetorical exchange: "We go here and not there, we acknowledge these

people and not those, in part because our environments constraint our choices. Place-

making constructs an understanding of places out of the actions, objects, and words we

use when we occupy a space and fill it with meaning" (p. 147). Much like in Michele de

Certeau's (1984) discussion of inhabitants who walk through space using a variety of

"unauthorized" paths, a place's meaning is understood on the ground via the tactical

everyday choices that we make, rather than by the strategic "bird's eye" perspective that

assembles it.

Case in point, Marback discusses how the Heidelberg Project in Detroit has helped to push back against the associations between a particular community and blight. Tyree Guyton creates art by collecting everyday objects found throughout the city and rearticulating them in unique designs on Heidelberg Street. Among the collection, Marback describes a Fun House, which was "an abandoned house that Guyton, his wife, and his grandfather decorated with pieces of discarded toys and broken dolls" (p. 149). In this way, Guyton is able to reclaim a few spaces (albeit small) of Detroit and rewrite their own story of place. To be sure, there are material impacts of such reclaiming of space, such as a larger community presence and the decline of abandoned spaces being used by drug dealers. Marback ends by calling for rhetoricians to "enact rhetorics that connect material and ideological struggles over spaces with the physical and representational practices of occupying particular places" (p. 154).

David Fleming (2009) also approaches this connection between material and ideological struggles of space-making, but instead of focusing on attempts to reclaim space by individuals or groups in the community, Fleming focuses his project on public policies that impact residents in low-income urban communities. Specifically, Fleming's goal is to look at the rhetorical failure of the Cabrini Green neighborhood in Chicago ecologically. Due to a loss of jobs in the 1960s and 1970s, a decrease in funding for Housing and Urban Development Projects in the 1980s and dramatic violence (caused in large part to the events that occurred between the 60s and 80s) that infiltrated the neighborhood, Cabrini Green became rhetorically separated from larger conversations occurring in the public sphere.

Instead, the public sphere became a thing to be shunned. As Fleming notes, in Cabrini Green, "To be 'in public' in a place like this…is to be at risk for one's own life" (p. 89) due to the high prevalence of crime in the area. For example, Fleming notes that high-crime, low-income areas like Cabrini Green silence their inhabitants. Because of the high rates of criminal activity, "people here mind their own business and raise their children to do the same" (p. 90). To address this blight, the city of Chicago has previously attempted to institute a number of solutions, which is where Fleming's project comes in as he analyzes each methodically with an eye to ethics and equity.

The first solution involves shipping residents out to the "safe" neighborhoods in the suburbs, a proposal that, although sound in principle, creates many problems for transplants who may feel disconnected from their original communities and in many cases must find ways of community to their places of employment. The second solution has been to gentrify neighborhoods through the creation of mixed-residential buildings. Apartments are gutted and converted to spacious condos for high wealth residents who "take a chance" on living in an urban environment in the same building as residents who ear just above $6,000 a year (Proposed Use and Concept). Fleming takes issue with this particular approach given the fact that original residents of Cabrini Green are still othered and that the success of the neighborhood and redevelopment project relies strongly on "selling" mixed-residential housing to upscale buyers. The third solution, which Fleming condones, has been to give over managerial and administrative control of public housing buildings to actual residents of those buildings, in that way locally empowering residents to determine what their homes should do and look like.

While Fleming takes on policy issues in urban space, Rice (2012) uses redevelopment projects as a backdrop for discussing how public issues impact community residents' subjectivities in light of urban policies. Rice attempts to make sense of how citizens position themselves via numerous types of claims or even remove themselves completely from public deliberation about important civic issues. By looking at issues through the formation of the "exceptional public subject" or "one who is related to the public through a feeling of awayness just as much as towardness" provides an understanding of how claims—or disengagement—are deployed in the face of proposals that impact communities. In essence, the exceptional public subject "is one who is related to the public through a feeling of awayness" and who "maintains this relationship through the act of feeling." For Rice, basing rhetorical work on affect and feeling can impede us, particularly in the face of such strong (un)feeling towards public life. Through compelling case studies, Rice demonstrates the ways in which claims of victimhood, claims of nostalgia, and claims of objectivity (or injury claims, memory claims, and claims of equivalence, as she defines them) can get in the way of listening to one another and moving forward in rhetorical work.

In some ways, it is not surprising that scholars have started to pay more attention to development and urban space. After all, rhetoric has long, deep ties with the city given the role it played in the *polis* in ancient Greece, where citizens engaged in argumentation and deliberation with one another. Interestingly though, the connection Rhetoric is (re)establishing to city space and the problems that arise within it has lacked attention to the professional stakeholders involved in space-making. Attention to publics can certainly be seen in the examples I list above—for instance, when Marback lists how

spaces are reclaimed or when Fleming notes the ways in which communities react to policy decisions—but short of critiquing these policies on place-making, little time is spent studying the ways in which practitioners actually make decisions when it comes to development and city design. While it is necessary to learn more about how communities respond to these policies, we should not forget that professionals who deploy arguments and designs for redeveloping space also work within a web of actors.

To be sure, scholars in Rhetoric and Composition who study place are aware of the connections between professionals and publics as they relate to designers and residents. John Ackerman (2010) recently has discussed how publics and planning can come together to influence the cultural economy of a place. In the city of Kent, OH, for example, the construction of the Haymaker Parkway in the 1970s split a blighted downtown from a growing campus community, exactly during the time when they needed to come together. Ackerman writes:

> The space between the city of Kent's downtown business district and the west and north sides of the university is bisected by the Main Street Bridge and Haymaker Parkway, a construction project conceived long before the May 4 shootings but completed shortly thereafter. The bridge and parkway comprise the epicenter of the cultural economy of Kent for several reasons. Haymaker Parkway in its current form inscribes the territorial boundaries of both the city and the university. Haymaker was designed to bring new economic life to the downtown business district but in my analysis the coincidence of the parkway with the shootings and unrest in 1970, and with what one resident called a "violation of the 50-

year commitment to the university as a cultural anchor," meant that the

city built a wall in the form of a boulevard. In doing so, it slowed the

reconciliation of dissonant points of view on a public tragedy by ensuring

that the artifice of the city, owned by all residents and employees, was

broken in two. (87)

At issue here is the ways in which design can impact—in this particular case,

negatively—the ways in which people who reside in communities talk with one another.

Ackerman discusses a number of documents that showcase how the design and

construction of this boulevard has been imagined and reimagined throughout the previous

decades. Indeed, although it was initially conceived of as speedy artery throughout which

traffic could flow through town, the need to bridge campus and the city has caused

planners to rearticulate its purpose by rezoning and slowing traffic down through the use

of traffic controlling mechanisms such as stoplights and signs (p. 88).

Fleming also discusses the importance that design plays in his ecological analysis

of Cabrini Green. He writes that the irregular, non-rectilinear street system around the

neighborhood makes it both confusing and non-democratic:

The original grid of North Town, for example was lost when Cabrini

Green was built; the complex consists now mostly of barracks style low-

rises lined up in a sunken pit or randomly sited high-rises surrounded by

massive fields and parking lots. There are no through streets, disorienting

dead ends, and huge swaths of empty space. In fact, a 1991 report

complained about confusing circulation patterns in Cabrini Green and

recommended that the old Chicago grid be reasserted to make the

neighborhood safer and more comprehensible.

For Fleming, the way that space is designed is tied to the public policies. In a different

piece, Fleming (2002) links the rise of gridded space with egalitarian rhetoric. Mainly, he

sees a connection between the equal parceling of land with Sophistic principles for

rhetorical deliberation. Mainly, by highlighting the ways in which Thurii was developed

along a gridded street pattern to fit its ethos as a place of democratic ideals, Fleming

connects design with democracy and civic participation.

Again, Fleming does not separate the public work of rhetoric from the rhetorical

work that transpires in design fields. In fact, he is aware of the interconnected nature of

the two when he writes, "To design for human beings is to design at a human scale; to

help those humans be *near* one another, their jobs, schools, parks, shopping centers, and

'third places,' like libraries and cafes, where they can meet; to build communities that can

be walked by creatures made for walking . . ." (p. 197). To be sure, Fleming is looking at

design very broadly (again, ecologically) in the sense that he posits that the materials

alone do not make a place; rather the policies put forth also help to create it. However,

these moves that Fleming makes toward urban design and other professional fields

complicit in the design of city spaces are quick and seemingly written from the outside

given that very little time is spent discussing the work that goes on in these professions.

Connecting this work in the public realm to research that looks at the

communication practices occurring in urban design settings may help to move the

conversation forward and fill in gaps that the extant scholarship is missing. In this way,

work being done in professional writing (PW) and technical communication (TC) can

help to shed light on this approach—both in general because PW/TC is concerned with the communication practices that transpire in professional settings and more particularly through the use of such tools as network analysis. At the same time, however, while the tools utilized in PW/TC can be a great boon to further the current work in Rhetoric and Composition on urban rhetorics, PW and TC have yet to expand research into this particular branch of design. And, while PW/TC have paid attention to matters of design, these studies have focused on artifacts that are primarily textual in nature. In what follows, I outline how this project seeks to combine the work being done in these two fields in order to provide a new perspective on urban rhetorics.

1.2 Chapter Overview

I begin this work in the next chapter by exploring a number of questions about design. Specifically, I wonder how we talk about design in professional and technical writing. What counts as design when we research it and publish on it? What artifacts are we engaging with and how do we engage with them when we invoke the world "design"? To answer these questions, I discuss the results of an analysis of research articles in PW and TC journals that focus primarily on researching artifacts of design.

In short, I establish a baseline for engaging in a discussion of design by familiarizing readers with the current conversations that circulate around professional and technical writing regarding design. Moreover, I propose a model through which we can see the disparate publications of professional and technical writing researchers regarding design all fitting in with and speaking to each other. Specifically, I argue that researchers can and have discussed design in terms of Observing, Testing, Critiquing, Creating, and Consulting on an artifact of design. And there is a wide disparity on what these artifacts

of design are. This discussion allows me to launch into an overview of how the specific design field of urban planning/design.

Having provided an overview of how we think about design in professional writing and technical communication, in Chapter 3 I put forth a brief history of planning, particularly as it relates to the design work that is implicated in the profession. I outline the roots of planning as one of three branches of design. Where architecture was charged with designing buildings, and landscape architecture with parks and greenspaces, planning emerged as a way to design and organize city spaces. With time, urban planners moved away from designing cities and more towards tackling the social urban problems. However, there has recently been a change in the profession—one which has resulted in a call to return to design. This overview on how planning currently engages in the discourse of design allows me to draw a contrast with how we in professional writing and technical communication discuss the topic. More importantly, this overview allows me to segue into my research study on urban design students, who experience the implications of these conversations about how planners should be reacquainted with design.

In Chapter 4, I lay out my methods for studying the different actors that are embedded within the design work of Masters level urban planning students enrolled in an urban design course. I begin by highlighting the work in network analysis that researchers and theorists have utilized to study human and nonhuman actors in professional organizations. At the same time, because such an analytical scope does not necessarily lend itself perfectly to my particular population, I describe the research being done in the field of Industrial Marketing Management, which has concentrated on asking research participants to create network pictures—cognitive representations of the different

individuals, departments, and relationships that connect these elements—in order to map their organizations. I describe how I adapted this tool to fit my own study and the research questions that guided me as I launched this study.

Chapter 5 highlights my results. I include a description participants' classroom projects; how they perceived their design work in the class in helping them to become professional planners; the different tools, stakeholders, and ideologies that they shaped their designs; and an analysis of how their network pictures reveal a disconnect between the work that they engage in within the class and the design work that they will engage in once they work on community-based projects.

I conclude with Chapter 6 by proposing an assignment in technical writing that may help students to apply the concept of wicked problems to their work. While the majority of this project centers on studying the influences that play a role when designers create renderings of urban spaces, I see an opportunity to engage with issues of urban placemaking more broadly to give our students a new lens through which to view usability. Specifically, using the videogame *SimCity 4* as a backdrop, I provide a model of how students can learn more about the ways that they engage with problem solving and how they may learn to think about the implications that their design decisions will have on users and communities further down the line.

CHAPTER 2. THE ROLE OF TECHNICAL COMMUNICATION AND
PROFESSIONAL WRITING RESEARCHERS IN DESIGN

2.1   Introduction

Within the last few decades, visual design has become a commonplace skill that

technical communicators have explicitly been expected to understand and implement in

their work. As a result, technical communication researchers have devoted much

attention to the study of design and its elements. In fact, in her review of the literature

from over ten years ago, Portewig (2004) noted that the technical communication

scholarship on design at the time argued, in part, that we should pay attention to visuals

and visualization in order to respond to its ascendance and to teach our students how to

expand their role from authors to designers (p. 37). I think that it is safe to say that these

arguments have won out in the field and that attention to design has simply been

absorbed into technical communication and professional writing. This propagation is

accelerated by new developments in UX (user experience).

A simple online search shows that multiple technical communication or

professional writing undergraduate programs feature courses in design or visualization

and often the line between writer and designer is becoming somewhat blurred (for

example, the webpage for Michigan State University's professional writing major notes

that "The program prompts students to become creative, imaginative, and expressive

writers and designers who are able to work with a wide range of documents and in a

variety of workplaces." my emphasis). Certainly, the ways that professionals in business and technical settings have come to envision the role of the designer within their environments have helped to place design (or portions of it at least) within the auspices of technical communication. Sawhney and Prahalad (2010) in Bloomberg Business, for example, define one role of the designer as "translat[ing] and communicat[ing] the value of a business idea to consumers" (para. 2). In essence, because so many designs which might be deemed "innovative" fail to catch on, Sawhney and Prahalad make the case for a more user-centered approach to design, which has fallen within our purview since at least Robert Johnson's (1998) User-Centered Technology was published.

That said, because design has become an understood facet of technical communication, it continues to be a subject of study within our field that gains importance and complexity— a complexity that can generate multiple (and sometimes contradictory) terms stemming from our own and borrowed from other fields. Given the latest move toward UX as a design and development component of the technical communicator's work then, it becomes necessary to review and revisit the key roles design continues to play in our field, though as I will show, not all of these roles deal strictly with direct user-testing. Hence, I highlight some of these key terms, ranging from (to name a few) "document design" (Ding, 2000; Johnson, 2006; Lauer & Sanchez, 2011; Longo & Wienert, 2007), to "visual design," (Brumberger, 2010; Kimball, 2013; Lauer, 2012; Rude, 2004; Varpio et al., 2007), to "participatory design" (Salvo, 2001; Spinuzzi, 2002), to "user-centered-design" (Schneider, 2005; Scott, 2008) to "design studies" (Wickman, 2014), to "information design," (Ward, 2010; Williams, 2010; Willerton & Hereford, 2011) which itself is comprised of "fields such as architecture, advertising,

cognitive psychology, computer science, graphic design, mass communication, information science, and rhetoric" (Cooke, 2003, p. 155). Some of these terms seem to coincide well. But we should also note that these terms are not necessarily exclusive. That is, researchers may (and do) fold document design into visual design, or software design into experience design. Essentially, the proliferation of design in technical communication has led to different terminology and starting points in the rich literature of design.

And yet, despite the expansive studies that investigate design, we do not have a larger, more integrated sense of how exactly people enact research on design in our field. This is particularly important given the robust nature of the multifaceted approaches that are being taken in the study of design in technical communication. Whereas Portewig (2004) was curious about why we say we should study design, I think it is more timely now to begin asking how we say that we study it. More specifically, I ask, how do technical communication researchers position themselves in relation to the artifacts of design that they study?

2.2   Situating Design Research

This question requires us to take inventory of what types of artifacts show up most commonly in the technical communication literature. In the past 15 years, technical communication researchers have studied design through[1] such artifacts as

- Posters (Lauer, 2012; Lauer & Sanchez, 2011; Ward, 2010);

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[1] Note that I do not mean "of" here in that these artifacts are used as objects of study, not necessarily as objects to design or redesign.

- Databases and Content Management Systems (Bacha, 2012; Clark, 2008; Sapienza, 2002)

- Spaces (Carliner, 2000; Ramey, 2014; Salvo, Pflugfelder, & Prenosil, 2010; Welch, 2009)

- Software (Albers, 2011; de Jong & Lentz, 2001; Smart & Whiting 2002; Wolfe & Neuwirth, 2001)

- Web 2.0 Interfaces (Potts & Jones, 2011; Rawlins & Wilson, 2014; Sherlock, 2009; Zdenek, 2007)

- Instructions/ Manuals (Catanio & Catanio, 2010; Friess, 2010; Friess, 2011; Ganier, 2009; Longo, Weinert, & Fountain, 2007; Tebeaux, 2008; Willerton & Hereford, 2011)

- Websites (Albers, 2009; Andrews et al., 2012; Cushman, 2014; O'Hara, 2004; Richards 2009; St. Amant, 2005; Walker; 2009; Walters 2010;).

- Forms (Kim, et al., 2008; Lavid & Taboada, 2004; Tebeaux, 2000; Varpio, Spafford, Schryer, & Lingard, 2007)

This list is not meant to be exhaustive—more so, representative of articles that have invoked design in their abstracts published since 1999 in the *Journal of Technical Writing and Communication*, the *Journal of Business and Technical Communication*, and *Technical Communication Quarterly*. With such diversity in the artifacts that researchers study, it makes sense that multiple avenues to study these artifacts would make themselves available. What is needed then is a way to determine how these different types of studies speak to one another in some way.

Here, I draw from larger discussions that have transpired in the field of technical communication research. Much of the literature that focusses on research in technical communication has noted that methods, questions, and epistemologies that researchers bring to the scholarship are so varied as to have little order or consistency. As Blakeslee (2009) points out, because technical communication is interdisciplinary it draws from and does work "that has implications for other fields," which creates a sense of incoherence not only for those outside of the field who wonder what we do, but also for those who work within technical communication as either practitioners or academics (pp. 129, 128). Indeed, Blakeslee and Spilka (2004) have argued that "we need to agree upon specific broad questions that we consider important for our field to explore and we need to articulate these question in a clear and more focused manner" and to properly match methods with these questions (pp. 77, 80).

What becomes salient here is a need for enacting more systematic and cohesive research methods on future studies in technical communication. In the face of such multiplicity, Carolyn Rude (2009) constructed a cohesive narrative of the extent literature in technical communication by mapping the types of research questions and goals of the statements regarding research questions in technical communication books (p. 180). Through this analysis, she found that books in technical communication are concerned with the basic question, "How do texts (print, digital, multimedia; visual, verbal) and related communication practices mediate knowledge, values, and action in a variety of social and professional contexts" (p. 176). This question concerns several areas in technical communication, spanning disciplinarity, social change, pedagogy, and practices. Despite the variance in questions and topics covered in these texts, their relationships can

be mapped onto a particular framework that shows interconnectivity. In other words, her approach helps to find the connections that lurk behind disparate research questions in the field's most common texts. Rude also suggests that a next step would involve conducting an analysis of research questions in the field's scholarly literature. While this undertaking would certainly prove fruitful, given the time and length requirements that such a project would entail—a study that she herself notes would be "daunting" (p. 207)—I put forth finding alternate maps for uncovering the connections that exist within our body of knowledge.

Specifically, in this study, I apply and extend Rude's (2009) concept of mapping relevant relationships in technical communication research by focusing on a very particular subset of research in technical communication—design. Despite this narrower focus on a particular aspect of the existing research, technical communication research on design can be equally robust in terms of borrowing methodologies from diverse fields, and also in aligning with research that stems from various design fields.

It can be expected that engagement with different types of artifacts of design yield different types of research questions. And these questions necessitate certain values and approaches for answers. I must give a short illustration here. Many of the articles that invoke design in their abstracts in regards to website design focus on cognitive approaches to design. While these articles are not necessarily driven by design principles, guidelines are occasionally mentioned as important to keep in mind in the design of websites. For example, Albers (2009) provides a few design considerations to keep in mind when creating websites in order to assist users on their journey through a site. These include items such as "People ignore difficult to understand information. If people can't

understand the information or do not see how it is relevant, the information is disregarded even if they think it might be important" (p. 188) and "Location on the display is critical since top locations and larger text are more salient and mentally overweighted" (p. 189). Similarly, Henson (2005) notes the web design principles he kept in mind when designing a website for the Lincoln, IL, Chamber of Commerce: "[Gestalt] principles call for a designer to use visual features that achieve symmetry, enclose content, group similar elements and place them in close proximity, separate dissimilar elements, and provide consistency…and figure-ground contrast" (p. 82) and "Vertical lines at the left and right sides of the page enclose content." (p. 84).

At the same time, while these articles mention the importance of adhering to standards and principles, researchers encourage technical communicators to move beyond them or to expand on them for particular users in specific contexts. For example, Youngblood (2013) states that technical communicators must keep usability standards in mind (p. 214), but that, at the same time, usability remains a moving target (p. 216) that must be balanced with the design skills that designers learn and contextualized to specific audiences (p. 218). Even the iconography and positioning of seemingly mundane elements of a webpage such as a menu bar, hyperlinks, and the main text takes on greater significance in cross-cultural communicative contexts (St. Amant, 2005).

However, unlike the articles that focus on Web design, when discussing Web 2.0 artifacts researchers very rarely talk about any cognitive design principles that guide them in their use and critique of these digital platforms. Rather, such articles tend to center around design in terms of interfaces, networks, and how their structures allow or preclude agency. Potts and Jones (2011), for example, map the affordances that social media

applications such as Twitter, Brizzly and Tweetback provide and foreclose through their respective designs. An important feature of design for the writers is how a technology's interface is linked to other human and nonhuman actors–"between tools and groups" which come together in the exchange of information (p. 342). Good design in these artifacts allows for Navigability, Discoverability, and Retrievability (pp. 354-355), but it is also invisible in that it links participants and messages with other communities while remaining unseen (p. 346; see also Dourish and Bell, 2011, pp. 147-148). In essence, the best social media tools allow users the agency to connect with others in a way that hides the functions of the tool itself, making this connection seemingly instant and automatic. Similarly, Rawlins and Wilson (2014) create a typology that categorizes data displays by the amount of agency that they provide for users to manipulate and engage with data. For example, the standard infographic may display information in a way that may be accessible for users to understand, but the designer remains solely responsible for the layout and information that is displayed. That is, the user of this information can only look at it from one perspective.

Yet, even when working with similar artifacts of design, researchers approach design from multiple perspectives. In articles that invoke design in their abstracts and that study the design of instructions and manuals, one can find studies of discourse that lean on user-centered design (Friess, 2010), cognitive approaches to wayfinding (Ganier 2009), textual analyses of existing documents (Tebeaux,2008; Willerton & Hereford, 2011; Longo, Weinert, & Fountain, 2007), and workplace interventions (Catanio & Catanio, 2010). In short, technical communication researchers study design through a multitude of avenues, most likely because each of their unique circumstances merit such diverse

approaches. While these multiple perspectives and artifacts of study shed light on a variety of design issues, to outsiders, they may give the appearance of a lack of focus. In other words, as Rude (2009) has mentioned, such patchwork of research might lead to charges of merely dabbling in design (p. 177).

The fact that "design" has been invoked so widely in our scholarship—as both something to be examined and as a way to create, for example—makes it necessary to develop a more comprehensive understanding of what we mean when we say that we study design. I would like to be clear here, however that I am not seeking to consolidate these studies into comprehensive definitions of design that can be understood across contexts. Design will continue to be invoked however writers feel necessary for their own purposes. Indeed, in her content analysis of the differing definitions of information design used by leading authors and practitioners in the field, Herrera (2013) relates the messiness of attempting to impose order on the numerous ways that design can be invoked. Moreover, definitions imply categories and categories don't necessarily always showcase each other's interconnectedness. That said, I do see a value in showing how approaches to design can be seen as integrated and part of a larger drive to understand ourselves as researchers of design.

As I will elaborate, a robust model that communicates our practices, values, and relationships in design could be of use when we speak to those outside (and even within) our own field about what it is we do when we research design in technical communication. That is, I extend Rude's (2009) efforts to create a "shared understanding" of research in our field in order to help us "recognize ourselves and describe ourselves to others" (p. 177). Specifically, I show how the artifacts mentioned above, though diverse,

function within a model of research that positions researchers as Observers, Critics, Testers, Creators, and/or Consultants of design.

2.3   Method

In order to gain a comprehensive look at how researchers in technical communication and professional writing have discussed design, I searched through the abstracts from articles published in the *Journal of Technical Writing and Communication* (JTWC), the *Journal of Business and Technical Communication* (JBTC), and *Technical Communication Quarterly* (TCQ) between 1999 and 2013 and included them in this corpus if they mentioned "design." Exploring how researchers have studied design necessitated first settling on what exactly was being/had been designed in these articles. I was mostly interested in exploring artifacts that could be found in industry settings— brochures, websites, Information Technology (IT) platforms and so forth. In this way, I hope to treat these artifacts as boundary objects which can, according to Star and Griesemer (1989), "live in multiple worlds . . . and have different identities in each" (p. 409) yet at the same time can connect different communities of practice (Wenger, 1998, p. 107). For example, researchers may approach IT artifacts in ways that both align with and deviate from the ways that practitioners do. Moreover, IT artifacts in industry settings are often also developed through collaborative efforts with stakeholders from different areas.

This means that of the 118 articles that were gathered through this method, 26 were removed because they focus on pedagogical or research designs, which may not necessarily have corollaries or a prominent foothold in a practitioner's setting. For example, Mackiewicz (2012) describes "the motivation, design, and preliminary outcomes of a business-writing prototype at Auburn University" (p. 229). Similarly,

Meyerring (2005) focusses on the development of professional communication curricula

that address the implications of globalization within the university and the workplace. In

part, her article should "help teachers and program developers design and revise courses

and programs that foster global literacies" (p. 468). Six of these 26 articles[2] mention

design in terms of experiment or research design. Thatcher (2001), for example, begins

his abstract by noting that he "explores three ways to design US empirical methods to be

more valid and ethical in cross-cultural studies" (p. 458). As with the texts that discuss

course or instructional design, these articles were omitted because they do not discuss an

artifact. That said, it is telling that writers in technical communication have spent much

time within the last 15 years discussing design in terms of research studies and curricula.

While I do not have the space in this manuscript to discuss the different types of

artifacts that appear in the literature in complete depth, I do present a list of the most

common types of artifacts of design that were gathered from within the data set in Figure

2.1. Table 1 provides a brief description of how each of these most common types of

artifacts that were coded. My definition of an "artifact" is rather broad. I mostly leave the

writers of these articles to define what qualifies as an artifact on their own terms based on

their description. For example, Sun (2006) writes in her abstract:

> Current localization practices suffer from a narrow and static vision of
>
> culture resulting in usability problems for IT product and design. To
>
> address this problem, this article compares user localization efforts of

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[2] Richard Johnson-Sheehan and Lawrence Morgan's abstract in "Darwin's Dilemma: Science in the Public Forum" makes reference to "creationism and intelligent design" (53). There was no way to categorize this use of design given the initial patterns that emerged so it was also included as one of the 26 articles that was eliminated.

mobile messaging technology in two different cultural contexts with a new

methodology of cultural usability. It calls for expanding the scope of

localization practices and linking user localization efforts to the IT product

design cycle. (457).
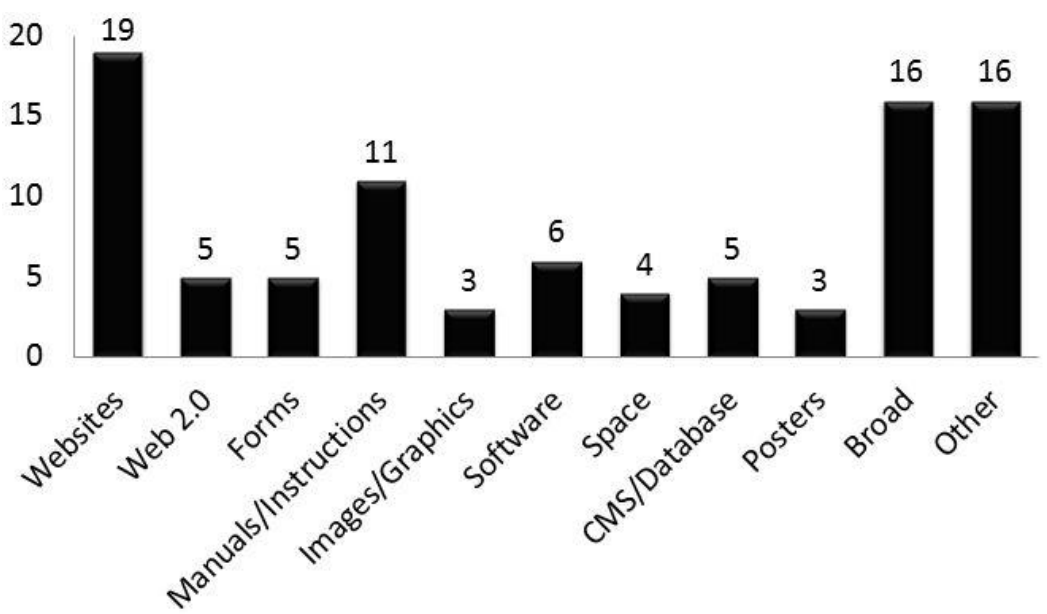
Figure 2.1 Frequency of artifacts in PW/TC design research

Table 2.1 Description and examples of artifact coding

Artifact	Artifact Description	Sample language of design
Websites	Digital online artifacts that may include a page of information or multiple pages linked together to produce a website. In both cases, information must be laid out appropriately for users to find. Larger discussions about purpose circulate around this type of artifact.	"Websites are, essentially, visual media. That is, factors such as layout, design, and graphics often serve as either credibility markers individuals use to determine if a website merits consideration or as navigational items used to access information on a website. As a result, website designers must consider how visual factors can affect the user's perceptions of online information." St. Amant 2005, p. 73

Table 2.1 continued

Web 2.0	Digital online artifacts that require multiple-user input in order to create collaborative and participatory webspaces and platforms.	"[Delicious'] infrastructure allows individual Delicious users to customize and control their experience through the selection of one add-on over another until they have found an add-on that mediates the actions that best facilitate their work. . . . Designers of these browser add-ons can accurately predict the bookmarking actions of individual users—bookmarking clearly takes place in a Web browser and not, for example, in a word processor or a page-design program." Stolley 2009, pp. 359-360
Forms	Artifacts that require user information and confirmation. Forms may require extensive input (such as patient records) or may simply transmit information and require a signature from the user to communicate that the form has been read (as with Informed Consent Forms). These may also be paper-based forms or multimodal in nature.	"In its layout, the patient record is highly visually organized. Information to be collected by the optometry student is divided vertically into a series of framed sections…Within each of these framed sections, textual and visual cues are used to prompt the optometry students about what information they should collect from the patient." Varpio et al. 2007, pp. 353-354
Content Management Systems and Databases	Artifact that uses online platform to collect data from users and store it for later use. Often this involves working directly with different languages.	"The present discussion will be most clear if I use a bird's-eye taxonomy that allows me to highlight the types of [Content Management Systems (CMS)] that are the focus of this article: Web CMS and CMS." Clark 2007, p. 40
Posters	Print-based artifacts that combine images and text in order to present information visually. Though instructions and manuals may also use these modes, posters may not necessarily instruct users on a process. Posters may, for instance, attempt to persuade users on the best qualities of a product for a variety of purposes.	"Poster assignments afforded students the opportunity specifically to use elements of visual language, including images, shapes, symbols, colors, typography, and page layout." Lauer 2012, p. 176
Software	Electronic program artifacts that require users to interact with some type of interface in order to be used. Like instructions and manuals, software artifacts allow the user to complete a procedure or a task; however, software may complete a task for the user with the correct sequence of commands.	"The [*Focus*] program generates two types of output. First, a general quantitative impression can be obtained of the number of problems detected per participant and the distribution of problems over the various problem categories. Second, and more importantly, the program yields a list of the problems detected by readers, which can be used as a guide to revise the document." de Jong and Lentz, 2001, p. 391

Table 2.1 continued

Instructions/Manuals	Artifacts that instruct users on how to complete a task or to accomplish a procedure. These may be physical manuals or they may be embedded within software.	"The study was presented as a pressure-cooker workshop, where participants were asked to boil potatoes. Prior to cooking, they had to perform seven tasks with the 'aim' being to familiarize themselves with the appliance. . . . Three different versions of the documents [instructing participants how to use the pressure cooker to boil potatoes] were designed for this study and presented in A5 paper format." Ganier, 2009, p. 404
Images	Static artifacts that represent information graphically. These may be photographs, logos, or other visuals. Images are distinguished from posters, though posters may include images.	"In order to gain a viewer's attention visuals must feature women's portraits in a way that attract notice and emphasize the power of the subjects and their achievements. . ...A designer will give prominence to certain elements to assure that they attract the reader's attention." David 2001, p. 19
Broad	No particular artifacts are mentioned, though discussions of values of design are clear.	". . . in stressing 'good figures,' semiotic theory is creating today's sex roles of images, as Burke and Lessing did more than a century ago." Ding 2000, pp. 37-38 ". . . a pleasure-based model [of design] extends beyond just a concern for efficiency and cognition; it employs a holistic approach that concerns itself with a person's body, feelings, thoughts, social relationships, and values as well as the degree to which they can accomplish their goals." Williams 2010, p. 442

As Sun states, she explores mobile messaging technologies across cultural contexts. Design—in particular IT design—is invoked via a study of text messaging platforms and technologies, which serve as an artifact worthy of examination in order to answer particular research questions. By "artifact" of design, I do not mean the affordances that lend to a design, but rather that which is created. "Products" of design may serve as an alternate term. Once these types of artifacts were cemented over time, a

similar approach was undertaken to determine how researchers described their positioning in regards to these artifacts (or in some instances, lack of artifacts). A description of the findings follows in the proceeding section.

While I do not rely on a pure, single method, parts of this study can be recognized as borrowing from grounded research because no pre-established categories existed prior to analyzing the data. Rather, the categories (both in terms of artifact types and roles that technical communication researchers have with design) emerged only after months of systematic analysis, coding and recoding of a theoretical and homogeneous sampling—in this case, articles that refer specifically to "design" in their abstracts (Creswell 1998, p.118). For example, coding in this way required moving beyond the simple categorization of articles based on whether they referred to "document design" and realizing that the term "document design" was being invoked in service of different types of artifacts (websites, manuals, etc.). However, I depart from a grounded theory approach in that I do not seek to create a theory and confirm or disconfirm it through the creation of subsequent categories; nor do I form a conditional matrix that describes the conditions influencing the focus on these particular artifacts of design or the reason for these particular roles (as per Creswell 1998, p. 57).

Here, my approach can also be seen to line up closely with Inductive Thematic Data Analysis wherein an entire data set is analyzed for specific themes (Braun & Clarke, 2006, p. 81). These themes emerge only after a "careful reading and re-reading of the data" (Rice & Ezzy, 1999, p. 258). Samples of how articles were coded for the roles that technical communication researchers describe can be found in Table 2, which I describe in the following section. Additional aspects of the study can be identified as being closely

related to meta-analysis in that patterns and relationships are being articulated from existing studies, though through non-statistical means. The articles in the dataset, the artifacts examined (when applicable), and the position(s) taken by researchers regarding design can be found in the Appendix A.[3]

2.4   Positioning the Role of Technical Communication in Designed Artifacts

Having glanced at some of the artifacts that appear in the technical communication literature on design, I turn to my main focus of this study: mapping how researchers discuss their roles in studying design through these artifacts. Mapping is certainly not new to professional writing and technical communication as it has been used to help trace out relevant relationships in the field. Most notably, Patricia Sullivan and Jim Porter (1993) first mapped the curricular placement of the then-emerging field of professional writing (in terms of establishing research agendas and disciplinary majors) within the larger English departments in which they resided. Sullivan and Porter present numerous representations of these relationships arguing that "professional writing can exist as one of the separate-but-equal fields [under English at large]. . .or it can be subordinate to rhetoric/composition, sharing part of the space of advanced composition" (p. 396). Moreover, Tim Peeples and Bill Hart-Davidson (2012) extend this work by mapping professional writing's relationship with composition studies specifically, finding that in the 20 years since Sullivan and Porter's article, curricular geographies have shifted the placement of professional writing more towards the former conceptualization—one that treats professional writing as being separate yet equal to composition and rhetoric.

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[3] Note that the Appendix can also be viewed here: http://bit.ly/1WugWJn

Though these studies look very broadly at the intricate relationships shared by English studies, composition and rhetoric, and professional writing, I focus particularly on the connections that exist between technical communication and design—a connection that is loosely hinted at in Sullivan and Porter but not fully explored (p. 410). In much the same way, in this section I articulate a map that captures the complex ways in which technical communication researchers approach design.

Seemingly, technical communicators have differing relationships to design that can be represented in lateral and vertical ways. Technical communicators can work vertically (above, within, or below a design) and also laterally (before, during, and after something is designed). While most of these positions and roles may seem straightforward, I define them below in order to show the difference between the vertical and lateral positions. Because these two spatial paths are better described when they are placed on top of one another, I will refrain from providing examples of these positions until I discuss how they are integrated. That is, I cannot talk about vertical movement in a vacuum without also referring to the lateral movement that is also mapped to the role of the technical communicator.

2.5   The Positions of the Technical Communication Researcher

2.5.1   Vertical Positioning

The positioning of technical communication researcher within the process of an artifact's design can look different depending on how and if the researcher interacts with the artifact in question (Figure 2.2). Researchers can study artifacts under its design, meaning that their work directly serves as a basis for the design decisions that go into the creation of an artifact. In the articles that make up this data set on design, researchers also

seem to work above a design, theorizing the role of technology and how an artifact should function. Lastly, technical communication researchers sometimes also work within a design, being directly responsible for an artifact's creation. This is seen more often in literacy-based artifacts such as website content and manuals, but as the frequency of artifacts shows, researchers have also taken charge of creating or reappropriating visually-based artifacts such as posters, images, and website layouts and graphics. These different roles do not necessarily function independently of one another. A technical communicator may posit on the usability of good software design principles (above), observe how users engage with similar software that already exists (below), and create the software itself (within). However, these roles look different depending on where in the process the technical communicator plays a part.

Figure 2.2 Researchers of design in professional writing and technical communication can position themselves vertically in relation to artifacts.

2.5.2   Lateral Positioning

The technical communication researcher may also study an artifact at various points of its design process (Figure 2.3). While this process may be iterative, there is an amorphous sense of an artifact's beginning, middle and end. Most of these phases seem self-explanatory. A technical communication researcher, for example, may study an artifact before it is created, or during its design phase, or after it has been designed in order to revise it and make it more usable. At the same time, the researcher may play a role outside of the design process itself and may give feedback to designers on their presentations regarding their designs (see Galbraith, McKinney, DeNoble & Ehrlich, 2014; Dannels, 2009; or Gaffney, 2014, for example).

Figure 2.3 Researchers of design in professional writing and technical communication can position themselves laterally in relation to artifacts.

Again, much like vertical positioning, these lateral positions may be occupied at various points by one individual. A technical communication researcher may conduct observations before the artifact is designed, provide input on a current draft of a design, conduct user testing with a rough draft of a design, and provide feedback on designer's descriptions of the artifact designed all for the same project.

2.6   The Roles of the Technical Communicator

When these positions interact and are mapped on top of each other, more complex roles become evident. Figure 2.4 shows how we can begin to map these multiple roles across the lifespan of a project and in terms of the contact that s/he has with the artifact being designed. Table 2.2 presents a different version of this map—one that includes descriptions and sample language overlaid on each role.
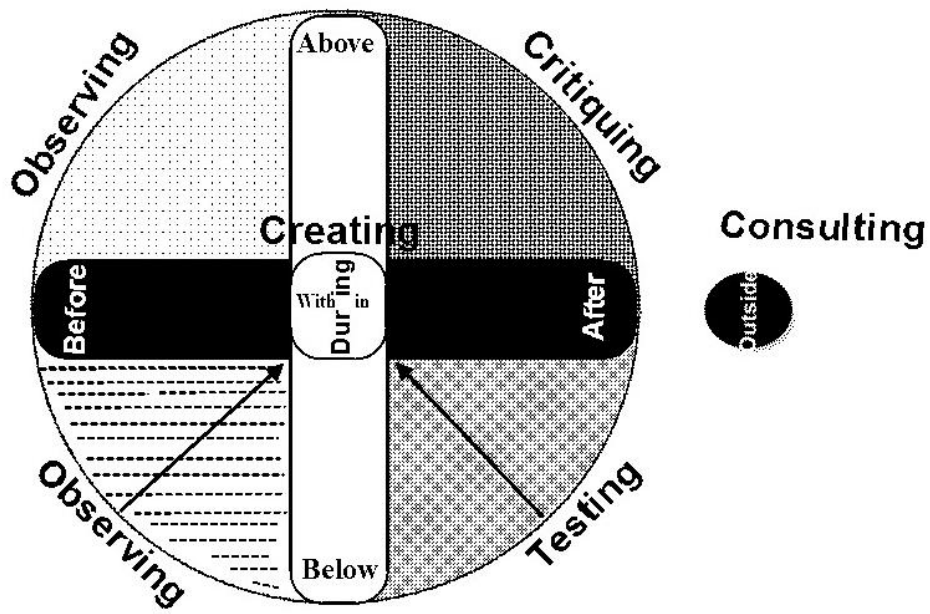
Figure 2.4 The Roles that researchers in professional writing and technical communication can adopt in relation to design artifacts.

Table 2.2 Description and Sample Language of Roles

Observing (Before/During and Below)	
Description	**Sample Language**
The TC/TC researcher gathers information on how users interact with a particular artifact so that a similar one can be designed either by the TC or by a design team.	"If an instructor does not have access to a guest speaker who can bring a laptop with a screen reader, or if the class does not include a student who uses a screen reader and would voluntarily provide a demonstration, the next best option is video. Two particular videos can be helpful: one that introduces the range of accessibility issues and the impact of poor design and one that further and more dramatically illustrates the impact of poor design on users with visual impairments with a guided tour of a screen reader in use." Youngblood (2009, p. 219) "In our website design, three teams conducted independent surveys and interviews to gather information about the users and later shared this information with the other teams. By gathering information separately and then sharing findings, we established a better understanding of who our users were, what tasks they might need to perform on the website, and how they typically perform those tasks." Andrews et al. (2012, p. 127)
Testing (During/After and Below)	
Description	**Sample Language**
The TC/TC researcher has a role to play in an artifact's design after it has been (or while it is being) designed. Research efforts go toward improving the usability of a product that is in the middle or final stages of production.	"When given a specific task to accomplish, instead of selecting the appropriate option in the tutor task menu, the users would usually navigate aimlessly around the system, hitting just about every link they could mouse over until they accidentally found a page that looked like it would allow them to complete the task they were attempting to fulfill. . . . Although it is still too early to tell if the new labeling structure has made the VCaP system more "usable," by semantically attaching meaning to the tutor task navigation menu we can already see a reduction in the amount of frustration tutors experience when they log into the system for the first time." Bacha (2012, pp. 257and 281) "Among other things, students suggested communicating with users throughout the process, of starting usability efforts earlier and planning them more, of allowing for numerous stages of user testing, and of getting to know users better." Scott (2008, p. 393)

Table 2.2 continued

Critiquing (After and Above)	
Description	**Sample Language**
The TC/TC researcher analyzes the design of an artifact or analyzes the interactions users have with an artifact. Unlike with Observing (Above), the TC/TC researcher sustain an engagement with a particular artifact after it has been released for public use. Unlike with Testing, however, this analysis may not lead to a direct change in the artifact, but it may push forward ideas for broader usability practices.	"The research involved both a textual analysis component (involving four specific pieces of documentation) and a primary research component of user usability issues. . . . [The findings] highlight the complex legal, political, and sociocultural issues involved in the transfer, importation, and exportation of technology and information products central to which are manufacturers, distributors, regulatory officials, communicators, and the interagency system of regulatory procedures and channels involved in controlling drug distribution and usage." Agboka (2013, pp. 31 and 40) "In this article I analyze Nightingale's use of visual and verbal rhetoric in the design and presentation of her rose diagrams. This analysis is important not only because it highlights a woman's role in the early development of information design, but also because it examines all three of the rose diagrams that appeared in the annex to her report on poor sanitary conditions in military hospitals on the front during the Crimean War." Brasseur (2005, p. 161)
Observing (Before and Above)	
Description	**Sample Language**
The TC/TC researcher posits on design in general. While he or she cites examples of artifacts and observes how people use them, he or she does not sustain an engagement with a particular artifact to Critique it. The focus is on discussing design broadly to influence the design of future artifacts.	[Articles are identified only through *lack* of language that aligns them with an artifact.]
Creating (Within and During)	
Description	**Sample Language**
The TC/TC researcher is involved in the making of an artifact.	"The service-learning projects in these two classes required students to work in small groups—this time five groups of four and one group of five—to produce recruitment, orientation, and training texts needed by the Planning Council." Scott (2008, p. 387)
Consulting (Outside)	
Description	**Sample Language**
The TC/TC researcher studies design after or while an artifact is created. However, she or he analyzes the ways in which a design is presented, described, or explained by designers of the artifact, not the design itself.	"At the end of the semester, each team prepared and completed a final presentation for the client, faculty advisors, and peers that detailed their design solution. Per the syllabus, the purpose of the design presentation was to describe the final design solution to a technically knowledgeable audience unfamiliar with the design." Dannels (2009, p. 406)

2.6.1   Observing (Before/During and Below).

Researchers may be brought in to assess how individuals interact with an artifact

before a new or similar one is devised. This takes the form of considering user needs at

the outset of a project by observing user's experience and cultural needs. Susan

Youngblood's (2012) discussion of applying web accessibility principles is a prominent

example here. With the intention of teaching her students strategies for developing

accessible websites for users with disabilities, Youngblood introduces them to readings

on disability but also has them watch videos that feature individuals in need of accessible

sites (p. 219). However, for instructors hoping to teach students about designing

accessible sites, Youngblood recommends the videos second only to a guest speaker

"who can bring a laptop with a screen reader" to provide a demonstration. The thought

here is that students will see how individuals with disabilities work with technology as a

starting point so that they keep access and usability in mind as they design.

In this specific scenario, students take what they learn about usability and directly

apply it to the code that they are manipulating, but the technical communicator does not

necessarily have to be the designer in order to observe. Sometimes, particularly with

technical or technological systems, the technical communicator serves as part of a team

that is responsible for an entire project's research, design and development. For example,

Kim et al.'s (2008) development of a handheld device that would display informed

consent information in a usable way required a multidisciplinary team composed of

"researchers and practitioners in technical communication, health communication, design,

psychology, and medicine" (p. 336). We can see that although Kim et al. discuss their

roles obtaining user data and testing it, very little is mentioned in terms of the actual creation of the application.

This contrasts with Wright (2012), who also discusses his students' design (or redesign rather) of digital informed consent forms, and who explicitly states that such production can be implemented and instituted by tech writers or tech writing students. One of his suggestions is to make sure that students who undertake the redesign of materials have a background in layout and design software and video editing software (p. 163). Youngblood's and Wright's respective students move from observing to creating while Kim et al.'s (2008) work remains below the design, undergirding it from the Observation phase to Testing phase. I do not mean to imply that one type of role with an artifact is more desirable or better—merely that researchers can engage differently with similar artifacts throughout the design process and that it is worth exploring these different relationships.

2.6.2 Testing (During/After and Below).

For technical communication researchers who study an artifact's design after it has been (or while it is being) designed, the bulk of their efforts go toward improving the usability of a product that is in the middle or final stages of production and make claims about findings. The researcher plays a role when a product has been designed—or when there is a prototype to test.

Bacha (2012) explains such a role in his discussion of the user testing conducted for the Virtual Consultant at Purdue—"an asynchronous online tutorial system" used by the writing lab consultants to respond to student papers (p. 258). Once the first round of user testing had been conducted and the artifact had been developed, a second round of

user testing revealed that tutors could not expertly complete the necessary tasks to access and respond to papers. Bacha suggests that technical communicators switch from language that prioritizes the system to language that more accurately captures the interaction that users have with systems. Here, for example, this would mean using such labels as "View Saved Tutorials" or "View Your Past Tutorials" instead of simply "queue" which, as Bacha points out, "does not tell the tutor anything about the status of the information they will find when they click the link" (p. 260). Bacha's changes to this artifact hit on many of the values of "good design" (findability, user-centered language, leading to action) and they stem from a sustained engagement with the artifact, testing one of its iterations.

Few articles discuss this testing work in isolation of other roles, however. To illustrate, Andrews et al. (2012) discuss the diffused usability testing that they conducted in order to build a website with information about an annual seminar. They begin in the role of observers by conducting surveys and interviews in order to gain a better understanding of who their user groups are and the tasks that they normally complete on similar websites (p.127). They then create numerous paper prototypes and conduct testing in order to determine how to redesign their artifact.

Interestingly, discussions of the Testing role also focus on testing an artifact after it has been designed, not necessarily to redesign the artifact itself but to help us learn more about how these types of artifacts should be designed, hence moving the technical communicator from testing to critiquing. As I explain in the following section, critiquing also involves the "testing" of artifacts, but critiquing relies on minimal research protocols and often involves mostly "self-testing" an artifact. In situations where a technical

communicator moves from a Testing role to a Critiquing role, the technical

communicator sets up a testing protocol but the findings derived from it don't necessarily

go back to improve an artifact's usability in any direct way.

For example, Ganier (2009) and Albers (2011) each set out to test users'

interaction with a specific artifact (crock pot instructions and the military command and

control [C2] system, respectively) but they do so not necessarily with the aim of

redesigning these specific instructional materials or simulation systems. The ultimate

goal of their studies is portability, each making the argument that the results are

applicable to other similar types of artifacts, which shifts Ganier[4] and Albers into a

Critiquing role.

Regardless of how researchers move toward or away from the Testing role,

occupying this space for whatever duration of time during or after an artifact's design or

prototype commonly involves paying attention to the relationship between user and

artifact. It means being attuned to bodily engagement or sustained cognitive interaction

with what someone has created. Often, in situations where the technical communicator's

work impacts the design itself, this role serves as the final opportunity to witness how an

artifact will meet the needs of a public.

2.6.3   Critiquing (After and Above).

Technical communication researchers may also discuss their own experience with

an artifact in order to develop principles of design. As stated above, these principles do

not necessarily lead to any direct changes in the redesign of any specific artifact, but may

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[4] Curiously, most of the research on Instructions/Manuals use empirical data in order to critique.

help to push the conversation forward in terms of what good design should do or look like. Not surprisingly, given the fact that the data set looks at articles from scholarly publications, the majority of articles tend to fall in this area.

Potts and Jones (2011), for example, conduct their analysis of social media platforms in part to "better understand how such technologies help or hinder participants who use them" (p. 356), noting that both academic and industry experts must "make greater contributions toward designing more contextually aware experiences for participants" (p. 356). Though not directly associated with the production or redesign of these platforms, Potts and Jones nevertheless see their Actor Network approach to social media applications as important to the conversations that occur when discussing the design process.

Writers of comparative and historical studies also take this same role. Elizabeth Tebeaux (1999), for instance, examines the Mexican cultural practices in writing letters, noting that US businesses frequently have to communicate with Mexican or Mexican American partners who value courtesy, dignity, and tact in written exchanges, to name a few characteristics from her findings (p. 78). Again, Tebeaux cannot directly influence the design of these letters, but she does hope that her analysis will provide "a basic understanding of these differences [between Mexican and American cultural values in written communication]" in order to "aid in the development of effective written documents" (emphasis mine, p. 80).

Not surprisingly, given that the sources for this data set are derived from academic articles, the vast majority of the articles present or advocate a Critiquing role for the technical communicator. However, these findings somewhat conflict with Rude's

(2009) point that "much of the research on design . . . is done by people who are aligned more with practice than academics" (p. 201). Or perhaps it may make more sense to say that in addition to the writers who hold primary affiliations in nonacademic workplaces, researchers with academic positions are well represented in this dataset, perhaps signaling that discourse of design may be opening up to academic researchers.

2.6.4   Observing (Before and Above).

Much like articles operating above and after an artifact is designed (Critiquing), articles that observe from above and before an artifact is designed tend to posit on design in general. However, because they do not look at any artifact in particular, discussions of design remain broad. Most of the articles found in the category I define as Broad in Table 1 reside here. While they cite examples of artifacts and observe how people use them, they do not sustain an engagement with a particular artifact to critique it; nor do they record their observations in order to impact the design of a particular artifact. Rather, the focus is on moving forth the discussion regarding design as a whole in order to help with the design of future artifacts.

In this role, technical communication researchers (re)articulating the work of the technical communicator and technical communication researcher around design. Not surprisingly, rather than providing a list of prescriptive tenets of good design, they problematize common or long-held beliefs about the role of the technical communicator in regards to design in order to raise awareness of hidden issues. Space and time constraints prohibit me from engaging in a long discussion of each of these articles but when put into conversation with one another, broader topics with implications for technical communication and design become evident in these articles; for example, the

place of functionality in document design looks very different from Ding's (2000) frame of reference than from William's (2010). The former traces the emphasis on beauty to patriarchal values, which associate beautifully designed documents with aesthetically pleasing (women's) bodies. These associations remain embedded in the work of technical communicators today through implicit values and language (for example, "widow control"). He concludes that technical communicators should move beyond document aesthetics for their own sake and instead focus on the utility of a document's design. In essence, there should not be a single standard for external beauty, but should rather be connected to its main purpose.

Williams, however, pushes back against technical communication's focus on functionality and advocates for a design that "employs a holistic approach that concerns itself with a person's body, feelings, thoughts, social relations, and values…" (p. 442). When Ding writes that "a page layout must be functional to be attractive," the implication is that good design should evoke clarity. But while clarity is perhaps the main concern of the designer, it may ignore the user holistically who interacts with the artifact not only cognitively but also emotionally and culturally, as Williams notes. Both articles attempt to move design away from the exclusive world of the designer and her/his edicts; but where Ding shifts the focus from the communicator to the text, Williams moves it from the communicator to the audience.

2.6.5   Creating (Within and During).

This role remains slippery in the literature. As mentioned above, creating occurs when the researcher is involved within an artifact and whose role requires her/him to build, design, or make an artifact. That is, regardless of whether the researcher observes

or tests, s/he is also responsible for making the necessary changes to an artifact when needed. Not surprisingly, most of the artifacts that are created by technical communicators themselves require alphabetic literacy as a foundation, for example, proposals, brochures, and manuals (Johnson, 2006, Friess, 2011, and Scott, 2008, showcase a few instances). Perhaps because of websites' transmission of alphabet text and because they allow for the creation and exchange of text with little need for printing materials and circulation services, they are most commonly presented not only as artifacts worthy of study by technical communicators but also as artifacts that technical communicators can (and sometimes should) actually create. However, as Appendix A shows, technical communication researchers can also create artifacts that require other types of literacy—for example, visual literacy (Lauer & Sanchez 2011; Salinas, 2002).

In some cases, researchers may create more technical artifacts that have a textual literacy component embedded, such as de Jong and Lentz (2002), whose designed software aids in the collection of user feedback for technical communicators to use in their testing activities. More often researchers may design documentation that provides support for a mechanical or technical artifact, but admittedly, it can be difficult to know where one ends and the other begins. In fact, Smart and Whiting (2002) argue that such resources be embedded together (at least in the context of software artifacts) so that users can gain the help that they need as they are learning to use programs.

Indeed, the role and responsibility for creating artifacts can be a contentious and political one. For instance, when Sapienza (2002) discusses the proliferation of XML language that has afforded the creation of systems that manage data and content, he notes that technical communicators need to become more involved in the process of learning

and designing with XML, primarily because of the rhetorical skills necessary in order to effectively create systems that can anticipate matters of genre, audience, and kairos (p. 156). This shift in role will necessitate that technical communicators expand their knowledgebase and become more familiar and proficient with concepts such as "nodes, trees, objects, abstractions, classes, inheritance, and recusion" (p. 166). That said, proficiency with technological tools does not necessarily guarantee that technical communicators will be allowed to slip into this role. He writes that

> The slippery issue concerning schemas and DTDs [Document Type
>
> Definitions] is what exactly should constitute a valid document structure,
>
> grammar, and syntax, and who should develop it? This latter question is
>
> not simply a bureaucratic issue but a political one, because in effect the
>
> person developing a DTD will be asked to write a new linguistic context,
>
> and perhaps a new language, that an entire organization . . . must be
>
> willing to adopt. . . .In short, the technical communicator designing a DTD
>
> acquires a position of significant power, potentially shaping how the
>
> organization structures knowledge about products and processes. (p. 161)

While we may move easily about in the creation of brochures and websites, it could be that the technical communicator will have to fight for the ability to design other artifacts in highly regulated realms.

However, something that at times remains in need of articulation is the relationship between technical communicators (or researchers) and designers when it comes to creating artifacts. Certainly, we have seen that researchers have positioned themselves within a design during its production in a way almost qualifying us as de

facto designers of certain objects. But to what extent are designers also charged with tasks suitable for technical communicators by default? In her description, Friess (2010) notes how

> Prior to my investigation, a design department at a highly selective, research-oriented private university entered into a contract with the United States Postal Service (USPS). This contract stipulated that the design department would reenvision several important documents for the USPS, including its core procedural and legal document, the more than 1,000-paged Domestic Mail Manual (DMM), as well as several smaller documents aimed at particular audiences within certain market segments (e.g., small businesses and nonprofit organizations). The goal of redesigning these smaller documents was to rebuild internal and external confidence in the USPS after the anthrax threats in the fall of 2001. The goal of redesigning the DMM was to make it easier for postal employees and large-volume mailing customers to locate specific information quickly and accurately. (408)

In this example, Friess refers to the team as designers, yet they have a very rhetorical task to complete. We must therefore consider if successful attention to usability, cognitive layout, ethical representation of groups, or any of the other values that we have teased out in the literature make these designers technical communicators in that regard.

Likewise, notice how Salvo et al. (2010) collapse designer and technical communicator into the same role. Or rather, they see the responsibilities of both tied together within the same network, sharing the responsibilities of listening to both human

and nonhuman agents. Note the (I believe) intentional slippage from technical communicator to designer when they ask, "How does a technical communicator know how to articulate voices from a project like Morgantown's PRT [Personal Rapid Transit], where, until only a few years ago, different actors in the network held radically different beliefs about the system?" and then respond with "the designer must look at the 'whole cloth' of the past project in order to understand the voice of the *chora*" (emphasis mine p. 251-252). In essence, it becomes murkier to know where the role of the designer ends and where the role of the technical communicator and even the technical communication researcher begins when dealing with complex systems. The three roles may be lumped into one, hopefully with the understanding of and adherence to usability practices. At the same time, however, we must be mindful of Carliner's discussion of the Hi Tech Museum's designers, who seemingly conducted their own "testing" but were ultimately unable to accurately read the users' cues in a way that made their spaces any more usable, as we would expect a technical communicator would.

But even if we were to tease out the designer from the technical communicator in these certain instances, the process of creating is not and should not be seen as one in which experts vie for control of a design. There are also the users to take into account. Certainly, many studies observe, test, or consider users in their discussions of design, but Bellwoar (2012), who traces how Meagan, a 28 year old woman trying to get pregnant, uses unsanctioned texts and artifacts in order to "understand, regulate, and control her body" (p. 335), emphasizes that users should be seen as "co-constructors and co-designers of texts" (p. 343). To illustrate, when Meagan developed colitis and other complications due to her pregnancy, she relied on charts and diagrams of the human

digestive tract in order to teach herself technical terms that would help her better communicate what she was feeling to doctors. In that regard, instances such as these show that Meagan broke from the accepted role of a passive patient and reappropriated the extant designs to meet her own needs (p. 343). Similar arguments about the role of user as designer can also be traced in Rawlins and Wilson (2014) and Salinas (2002).

2.6.6 Consulting (Outside).

Several studies also examine the presentation or communication of designers or design students. For example, Artemeva and Freedman (2001) use genre theory and activity theory to study how "tension, contradiction, and dissonance" emerge in engineering and software design firms (p. 164). Similarly, Dannels (2009) explores the genre of design presentations, wherein students presented "on their design of a new processing technique for nutritional beverages" (p. 400). In these scenarios—and ones similar that fall into this role—the artifact in question (if one is mentioned) has already been designed or is in the process of being designed, but the technical communication researcher acts as a consultant for larger disciplinary or organizational communication issues. Of course, because any recommendations or illuminations in workplace or classroom culture may have an impact on the design work that takes place within these settings, we cannot say that researchers who study design discourse have absolutely no influence on an artifact, only that their concerns are on other matters only loosely connected to design.

2.7 Caveats and Limitations

Before concluding, several key points should be considered here. Regarding the creation of the data set, centering in on only those articles that explicitly used the word

"design" in their abstract may have disqualified other worthy voices from being included. I am aware that much of technical communication as a whole deals with various facets of design. Indeed, technical communication has long involved, in part, the creation and exchange of instructional delivery materials for using tools (Connors, 1982, p. 329), so one could certainly make the case for the inclusion of similar words such as "create," "build," or "make." However, focusing specifically on articles where "design" as a term was important enough to be mentioned in the abstract created a systematized way for including and excluding articles from the original sources of data.

Also, we must remember that these results are gathered from a review of the literature that exists in a very specific set of journals. As Greenland and O'Rourke note, "no meta-analysis can compensate for the inherent limits of non-experimental data" (p. 654). As such, opportunity for further research into the artifacts of design and the roles that technical communicators play within design exists through more direct interaction via research instruments such as surveys, interviews, and focus groups.

On a related note, this review has only focused on the roles and artifacts of technical communication researchers; the next step in painting a more complete picture of design in technical communication would be to conduct an analysis of the artifacts and roles that are relevant to the work of practitioners and explore how the two converge and diverge. As Kimball (2013) has noted, practitioners can sometimes hold differing values of design from their "ivory tower" counterparts when it comes to visual design and design principles (p. 35). Given the expansiveness of the artifacts with which researchers interact and the roles they play with said artifacts, it would be beneficial to map out a

similar model for practitioners to gain a fuller sense of what artifacts are coming to be seen as meriting attention in the field at large.

<h2>2.8   Implications, Discussion, and Conclusion</h2>

Technical communication researchers study design artifacts from numerous positions and through various relationships with artifacts. They can posit on design before any artifact is created, observe how similar designs are used, test prototypes, critique designs, create an artifact, or consult on communicating design effectively—and often, researchers assume more than one of these roles. Because technical communicators can work with subject matter experts in a wide array of fields on a range of projects (Society for Technical Communication), it makes sense that researchers would choose to engage with a number of artifacts in their discussion of design. We can see how the literature is shaped by these disparate fields through the variety of epistemologies and methodologies that ground the work of the studies in this corpus.

To answer research questions, researchers not only investigate a plethora of artifacts but also they draw on numerous theories to guide their research, such as cognitive studies, actor-network, localization theories, and genre theory, to name a few. The implication here is that each one of these disparate fields brings with it its own set of epistemologies and research questions that shapes how researchers think about their research approaches. Overlapping approaches to design that stem from an array of other fields make it difficult to find a single method for conducting research in technical communication. An integrated model helps to show how these approaches might interconnect. By moving beyond individual methods and methodologies and fields of study, we can see the ways that technical communication research engages in knowledge-

making at all points of the development of artifacts, regardless of the stances taken by individual researchers.

This study has made certain assumptions more concrete. For example, technical communicators' main design artifact of study in the outset of the 21st century has been the website. At the same time, other less-often thought of artifacts of design are becoming available for study (such as spaces and software) as the role of the technical communicator has spread. Additionally, while Gunter Kress's (1999) assertion that design—and not critique—should play a larger role in the 21st century, many technical communication researchers still reside within the role of Critiquing regardless of the artifacts that they are analyzing. However, as I have discussed, technical communicators also inhabit numerous other roles in their study of design artifacts—often simultaneously (Appendix A). Still, it should be noted that researchers are, in fact, placing themselves into the role of the Creating artifacts when they conduct research. While websites are certainly represented in force, researchers also create brochures, videos, software, and databases.

Taken together, having looked at the different types of artifacts that we consider when we invoke the term "design" in our research and having mapped the different relationships that are conveyed (implicitly or explicitly) in this body of literature, we are reminded of Blakeslee's point that "we use so many different methods for our research and we define ourselves so broadly" (146). However, I don't see this as being necessarily a negative development. The model I put forth is not meant to necessarily impose order on the variety of approaches to studying design as much as it is meant to showcase the multiplicity of voices and experiences that researchers have brought to design. That is, I

articulate the relationships that we bring into design and how each role highlights a unique engagement with an artifact. What one studies from an Observing standpoint can be just as thought-provoking and worthy of exploration as someone who Tests. As design becomes a commonly expected competency for technical communicators, researchers in the field will have to develop multifaceted ways of studying the subject of design.

That means, as we have already seen, adopting and adapting to multiple roles in our study of design. Sullivan and Porter use the analogy of watching a basketball game to showcase how different roles yield different types of data. One's role as a fan sitting in the seats yields different information from that obtained through the role of a camera operator from "the crow's nest"—each set of data "encourage and suppress story lines we may spin to recount and explain the game" (p. 6-7). The same is true for our research of design but it has been difficult to realize how we have all been positioned within the same arena, connected to one another as researchers. What I hope this model does is make it easier to develop an intentionality about moving from one point of engagement to another in order to develop a fuller comprehension of design. In the end, a rich tapestry of methodologies and epistemologies that takes all of these viewpoints into account can help us move past the patchwork of the field and see the interconnectedness of what brings researchers to the field. While it is true that technical communication borrows from different fields, prominent patterns and values can emerge when we map out the seemingly disparate research topics and artifacts that are brought in to the research of the field.

Moving forward, this model may help us articulate how we talk about the plethora of our interactions with artifacts in the research that we conduct, and it can also provide

our students with a method of seeing how their experiences line up with what employers look for. Recently, Lauer, Brumberger, and Hannah (2015) noted that professional writing majors have to sell the skills that they develop in the major as professional experience when applying for a professional writing job. If a job requires "experience with design," it may help students to not simply state that they have "redesigned" a website, but to clearly state what roles they occupied in the redesign process to provide a more robust description of their skills. They may have, for example, begun by critiquing a technology or artifact, then proceeded to design a prototype, and then observed several users' engagement with that prototype. As each role requires different skills and level of engagement with artifacts, it is important that students be able to articulate fully their engagement with design—particularly as the field comes to embrace a wider array of artifact types which may fall outside the more "standard" instructions or forms.

CHAPTER 3.   AN OVERVIEW OF URBAN DESIGN

3.1   Introduction

As we have seen, technical communicators discuss design of artifacts in a

plethora of ways and from several perspectives. Here, I will shift gears and discuss how

urban designers discuss design. This may help us gain a better understanding for the

issues and controversies that circulate within a different field than our own. In urban

planning, as I will highlight, professionals use design as an avenue to create spaces that

will impact the public. This differs from writing-specific fields considerably as we teach

students to become experts in language and word-choice, which will help in the

communication of ideas. Still, Chapter 2 indicates that design is also becoming something

of interest to researchers, at least from a professional writing and technical

communication perspective. I hope to complement how recent researchers in

professional writing and technical communication have brought in design into their

discussions of rhetoric, writing, and professional communication, by expanding on what

we might learn about communication from designers of spaces. I must first take some

time to walk us through a portion of the history that has shaped urban design into the

discipline it has become. I will highlight a few of the disciplinary reasons why urban

designers might approach spaces the way that they do and which texts have been highly

influential in theorizing spatial design. We must keep in mind, however, Alex Krieger's

(2009) warning that the term "urban design" can be very difficult to disentangle. It's a slippery term that can mean a variety of things depending on the context (and time period) in which it is used (pp. 113-114).

If we look at urban design as "the practice of designing urban spaces," we can see that such a practice was common long before it had a name. Indeed, one can trace the design of cities back thousands of years to Roman, Greek, and even Egyptian practices (Kostof pp. 34 and 59-60). However, my discussion here picks up in the American setting at the turn of the 20th century, for it is then that the design of cities became sanctioned as an acceptable profession in the United States. Briefly, I will outline how urban design was initially tied to urban planning programs, though it did not officially go by the term of "urban design" then. These planning programs began to form within architecture and landscape architecture schools in the early 1900s, but when planning turned to more social causes in the mid-20th century, the profession (and the new term "urban design") was left to architects to manage. It has only been recently that urban planning has attempted to return to design, though not without some friction and controversy.

3.2   The Establishment of Urban Planning in the American University

As mentioned above, we cannot talk about urban design without first exploring its embedded history within architecture, urban planning, and landscape architecture. Harvard established the first coursework in what we might think of as urban design (designing urban space, very loosely defined) in the United States in 1909—right during what many in architecture history would label the Modern period of architecture, which becomes important later for my discussion. These courses were titled "civic design" and were housed within the landscape architecture program (Anselin 197). That is not to say

that before 1909 there had not been any professional training in the designing of urban environments. Certainly many European nations with cities much older than any in the United States had begun to turn their attention to city development, growth and density throughout second half of the 1800's (see Rybczynski 1995).

Still, the course on city planning at Harvard was described by James Sturgis Pray (1910) in the inaugural volume of *Landscape Architecture Magazine* as

> a research course, but with lectures and assigned readings. . . . The lectures aim to cover, in theory, the general field of City Planning, parts of which are treated in more detail, with practice in actual problems of design and construction in other courses. In the lectures, the attempt is made to show certain of the more important causes that have determined the forms and arrangements of city-plans, and to deduce certain fundamental principles of organization, afterward applying these to some of the problems of the modern city. (66-67)

Pray does not delve into what some of these problems might be; his aim here is to recruit students into this course by showcasing the many resources available to the department. The available "museums, libraries, photographs, plans, lantern-slides, etc." are "not only unequal but as yet unrivaled" for the student who enters Harvard with an interest in city planning (67).

In January, 1913, the American Institute of Architects (AIA) had put together its first journal—the *Journal of the American Institute of Architects*—which is presented as "the official organ of the American Institute of Architects. Its purpose is to serve architects by giving them the news of their profession—and especially by informing them

of what action is being taken by the Chapters of the Institute on all public and professional questions which bear upon the present and the future of architecture" (Committee on Publications, 1913, p. xxx).

Much like the AIA's "Quarterly Bulletin" that it replaced, the journal was envisioned as a place for all architects to convene and share information from disparate parts of the profession which might otherwise not be known. The journal houses spaces for forums, commentaries, rebuttals, book reviews, and images of architectural monuments, sometimes accompanied with narratives or thought-pieces. The second issue from the first volume, published in October of 1913, features sections on Building Laws, Committee reports, Housing (both urban and suburban), and a section on City and Town Planning. Within these pages, information on upcoming lectures and exhibitions is published, along with a course description for Harvard's course on city planning. The aims of the course, as described therein, are, in part, to "develop the idea of the modern city as an organic whole, the perfect efficiency of which demands attention not only to the best service of many separate functions, but also to the perfect interrelation of its component parts" (p. 448).

Additionally, the course description mentions that the principles of a city's organization will be applied to "some of the problems of the modern city, and particularly to the more national planning of our American cities," but again, just what those problems are remains obscure. The course description conveys a wide array of topics for those interested in city planning to take (pp. 446-447). The writer of the piece heralds the course as a necessary development in the continued progression of architecture, particularly in light of the bad reputation that architecture has suffered. S/he notes that the

public views the architecture movement negatively, because architects have been charged with having overemphasized the aesthetics of their designs: "They are said to have been too deeply immersed in the study of public squares and monuments, and in the application of the principles of their art to the design of public buildings and to the laying out of civic centers and group plans, while devoting little or no attention to the economic aspects of town-planning problems" (p. 448). I find it fascinating that much of what the writer expresses has stuck with architecture over a century later, after the rise, fall, and current growing pains of urban planning. Whether fair or not, a perception remains— noted in the urban planning scholarship and even from some participants in my study— that architecture continues to be a field that is too invested in its own theoretical musings on design, which divorces it from creating artifacts that meet the actual needs of a town's citizens. I will cover more of this momentarily.

Two years later, in 1915, the editors of the journal would devote a special issue (Volume 3, Issue 6) to the issues regarding city planning. The introduction, written by associate editor George B. Ford, casts city planning in the same bright language of the 1913 issue. He writes that planning is "a great hope for the future of architecture" as it "means not only the correction of present faults, but the prevention of future mistakes" (p.248). More interestingly, Ford goes on to note that planning is "founded upon the basic idea that the right of the individual must be submerged in the paramount right of the community; but, strange to say, the application of this principle will mean that the right of the individual will be safeguarded as never before" (p. 248). Clearly, with such lofty language, architects saw that shifting focus away from individual buildings and looking at the shape of the city as a whole would help them both branch out as an organization

and promote a type of spatial justice—though, obviously, one constructed by those who were able to control the offered courses and recommend suggestions on "good" city form.

Still, as we should remember, the main audience for these issues was architects of all kinds and city planning—at least anything that resembled what we recognize as an organized profession embedded within local government infrastructures—was not yet a field of study. We can surmise that in its nascent form, planning was seen as an architectural concern, and as a result, one centered on design.

By 1923, urban planning became a specialization at Harvard; by 1929, it had grown into a separate degree program. These forms of urban planning programs took one type of shape or another across landscape architecture and architecture departments across the country (as a course, a specialization, or a program). During these decades, discussions of planning had mostly concentrated on imagining cities as organisms. According to architectural historian Spiro Kostoff (1991), this organic model of "biological cities" brought with it a metaphorical "language of discourse in" planning communication (16). He notes that if cities are organisms, they possess "a definite boundary and an optimum size, a cohesive indivisible internal structure and a rhythmic behavior that seeks in the face of inevitable change to maintain a balanced state" (15). Moreover, if we speak of a city as being alive with "cells and arteries, it can become pathological, and interventions to correct the diseased form will be in the nature of surgery" (16). Indeed, architects and planners frequently did devise idealized visions of cities that would function much more "organically" than how they had been constructed.

Take, for example, Daniel Burnham's 1909 plan for Chicago (Figure 3.1). Under this plan, Chicago's most famous design feature—its gridded pattern—is undone with the

overlay of a more nodal circulatory road system; traffic pumps in and out through streets that radiate out from a central chamber. The plan reads, in part, that it presents the city "as a complete organism in which all its functions are related one to another in such a manner that it will become a unit" (as cited in Bayer et al. 2010, p. 8). Of course this plan never came about, but it is telling that the Commercial Club of Chicago—the organization responsible for promoting commercial interests in the city—promoted it as a useful alternative to the city's pattern.
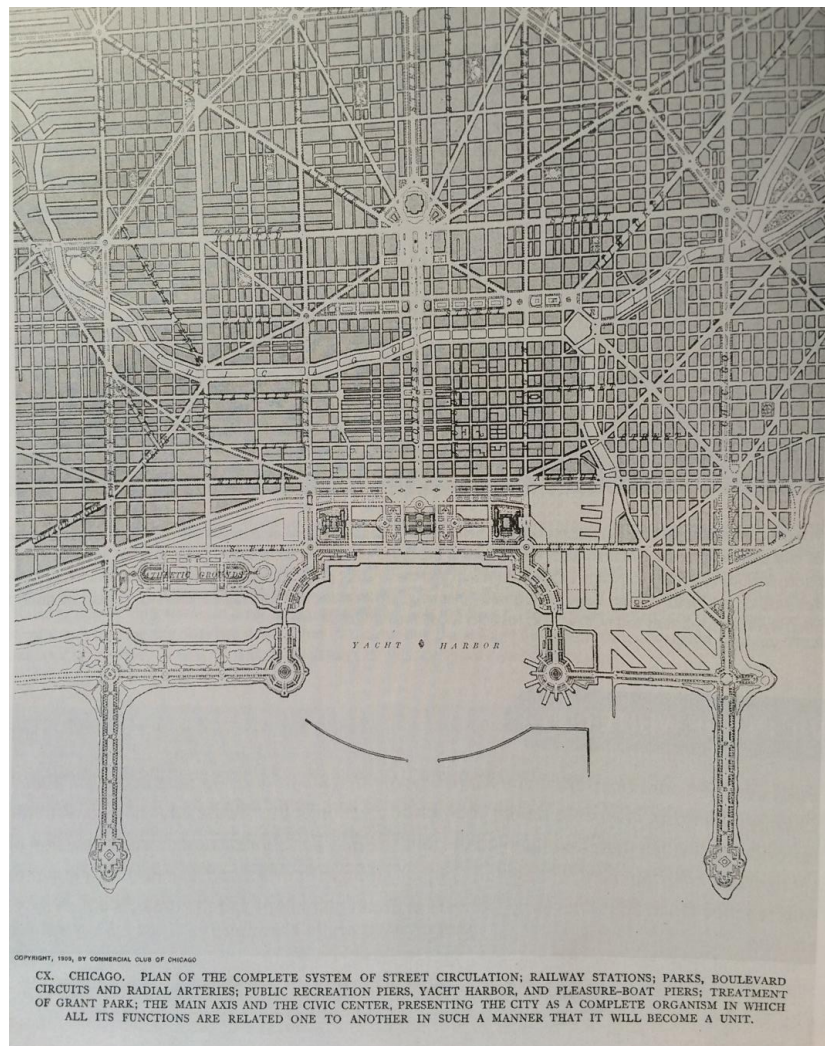
Figure 3.1 Daniel Burnham's plan for Chicago, 1909.

This "organic" paradigm to city planning was not a product of planning finding a home within academia. Rather, as we can tell from the write-ups in the Journal of the American Institute of Architects, this way of looking at cities had permeated long before planning began as a course at Harvard. Indeed, throughout the 19th century, architects such as Ebenezer Howard and Frederic Law Olmsted were designing organic communities away from, but close to, cities themselves. Because looking at cities as organisms requires a holistic overhaul of the current design, it was hardly ever possible to make plans like the 1909 design of Chicago a reality. Not having the space or power to recreate cities, architects had moved away from those boundaries and focused their efforts on designing organic places on blank canvases. These suburbs and their distance from the city would unpredictably come to play a larger role in design in the second half of the 20th century.

I close this section by noting one more important development in the history of planning that will help articulate the current way that planners approach design. In the mid-1940s, the University of Chicago's School of Sociology had become interested in the profession of planning and decided to create its own planning program. However, unlike previous programs, the fact that this program was housed in sociology and not architecture meant that the focus would be slightly different than those that had been established beforehand. In particular, this planning program would require that students establish a "body of theory or philosophy underlying planning" and develop "specialized techniques which have been found relevant, necessary and sound in the course of empirical practice" (Perloff, 1957, p. 137). As more planning programs began to be developed in (or moved to) Social Science or Public Policy schools, planning in academia

came to be "dominated by applied social science research, moving away from an exclusive focus on physical form toward a wider range of social, environmental, and economic concerns" (Anselin et al., 2010, p. 197).

3.3   Interlude: Modernism and Architecture

As I've mentioned, urban planning arose in a heavily modern period of architecture. There are numerous debates over the beginning of this period and how well it can be sectioned off into subcategories due to the amorphous categories used to label this type of architecture. As Alan Colquhoun (2002) puts forth, "The term 'modern architecture' is ambiguous. It can be understood to refer to all buildings of the modern period regardless of their ideological basis, or it can be understood more specifically as an architecture conscious of its own modernity and striving for change" (p. 9). As a result, what we choose to see as the start of the modern architecture period can range from the mid-1700s (see Collins 1998, for example) to the late 19th century. This is not necessarily the best space to get into these arguments, but it is important to pay attention to the some of the recurring tenets of Modern architecture.

For instance, unlike the cosmic cities that were arranged with religious or symbolic meaning (for example, built with the agora or cathedral at the center), modern cities utilized space in "logical" ways, which often meant creating recurring patterns that could be mass-produced. Space was "abstract, neutral, and continuous" (Kelbaugh 2002, p. 87) during the Modern period of architecture. Yet, at the same time, space was separated in that certain spaces were specifically for certain tasks. These (sometimes contradictory) features are particularly apparent when looking at buildings constructed in the "International Style," such as Chicago's Kluczynski Federal Building designed by

architect Mies Van der Rohe. The International Style, a subset of Modernist architecture, attempted to maximize space as much as possible and to highlight the features of Modernist architecture across national boundaries, in effect creating a style which could, in theory, "fit" internationally. The Kluczynski building was one of three designed by Van der Rohe in that plaza, the other two being the courthouse and the post office (See Figure 3.2). We can note how the courthouse and the federal building lack ornamentation in terms of architectural design (they are nearly perfect rectangles) and materials (no decorations are apparent and the exterior is plainly steel and glass). Moreover, the bottom floors of the courthouse and the federal building give the illusion of being suspended in air, "held up" by pillars, in order to convey that the post office could neatly slide underneath the two buildings.

Figure 3.2 The Dirksen Courthouse (left), Kluczynski Building (right), Loop Postal Station (foreground)

In addition to this ordered approach to designing buildings, Modern architecture was also interested in efficiency. Old, seemingly dilapidated and unusable buildings were torn down to make room for high-rises, factories, or office buildings. Distance was not a large concern given that vehicles could aid with transporting people and materials from one place to another. I touch base again on Modern Architecture later in this chapter when I discuss Postmodern Architecture's response to these values, but for now, this is a sufficient discussion.

Given the close proximity between planning (which we must remember was city design in the early 20th century) and architecture (building design), it is not surprising that a few architects continued to influence and be influenced by the design of cities. Most germane to this topic is Le Corbusier, a Swiss architect who helped the Modernist Architecture movement in the 20th century progress. Most famous for deriding ancient cities for their "pack donkey"-like designs, Le Corbusier looked down on the "meandering" zig zags of streets because they did not represent Modern man (p.6). In contrast to the "distracted fashion" of the pack donkey, man works in an ordered and logical way, which is why he preferred the rectilinear and straight roads of American cities. Indeed, when envisioning a contemporary city, the segregation of functions is apparent. Motor traffic, skyscraper use, and city layout are all divided so that different areas and levels are used for separate purposes.

Such affinity for order and separation was evident in Le Corbusier's architecture as well. For instance, much like with the International Style, residences in hi-rises were raised above ground to allow for communal activities on the first floor. Such activity would be invited by a flow of "a river of trees" under the building (Newman p. 13).

Evidently, in ordered Corbusian designs, which to some degree have continued to influence the construction of hi-rise structures, there are floors in which to congregate, floors in which to perform daily chores, and floors in which to reside.

3.4   The Turn Away from the Modern

In *The language of post-modern architecture*, Charles Jencks (1991) states that "Modern Architecture died in St. Louis, Missouri on July 15, 1972 at 3:32 pm (or thereabouts) when the infamous Pruitt-Igoe scheme…[was] given the final coup de grace by dynamite" (p. 9). The 2700-unit project, although designed by Leinweber, Yamasaki, & Hellmuth, was a perfect example of the influence that Le Corbusier had had on the creation of spaces in the urban environment. Yet, despite the apartment buildings' strong emphasis on the modernist tenets of rationality, privacy, and separation of space, the Pruitt-Igoe complex did not arise as the safe haven that Le Corbusier had envisioned. Instead, due to low occupancy, the buildings fell into disrepair and the neighboring area became plagued with gang violence (Newman 1996, p. 11). The inability of design to engender order is particularly telling here as it signaled a rejection of a rational totality, of monological ways of looking at space (see for example Fishman's, 1977, description of the meaning behind the demolition of the Towers, p.274). Indeed, many at the time, and even today, blamed the Pruitt-Igoe's downturn on a lack of attention to people's affective needs. Lack of communal spaces and green spaces are frequently brought up as reasons for the failure of the housing complex. Take, for example, Abelman, Volder, and Bruinsma's (2012) language in their proposal for re-envisioning the strip of land upon which the Pruitt-Igoe used to stand. They write that "A lack of community, not simply design flaws, caused Pruitt-Igoe to fail" (para. 2) and that their design "is a process of re-

colonization based on the qualities that we believe the original Pruitt-Igoe lacked: a focus

on public space, green spaces, and places for people to meet, start businesses, be creative,

play, and learn (para. 4)." It seems that despite the attention to rationality on Le

Corbusier's part to his design, people needed these spaces to act as more than just shelters,

but as communities and when that was not available, the project failed.

As important as the demolition of the Pruitt-Igoe housing structures is to the story

of design, however, the existence of these "vertical neighborhoods for people" (Ramroth,

2007, p. 164) throughout the 1950s and 1960s is also key, for it signals a very important

bifurcation in the history of planning, design, and architecture. It was during these

decades that planners had decided to abandon the practice of designing cities. Indeed, in

these decades, as more planning programs propagated in academic settings, they were

housed in schools of public policy or social sciences, not in landscape architecture. Those

created or maintained within Architecture schools experienced strained relationships as

they competed alongside differing values.

With growing roots in social science programs, planners began to become more

aware of the social problems that spatial injustice caused. With the "greenlighting" of

highway construction post World War 2, cities needed to find already-inhabited spaces

through which they could construct 8-lanes of traffic. Not surprisingly, lower income

neighborhoods were often the victims of these bureaucratic decisions as they were seen

as blighted areas beyond repair (Mohl 2000, pp. 233-234). Indeed, Altshuler and

Luberoff (2003) suggest that more than 300,000 low income households were displaced

as a direct result of planning projects in the 1950s and 1960s (pp. 83-84). This led the

dissolution of culturally-rich ethnic and racial enclaves in cities, which meant that residents had to enter discriminatory housing markets.

At the same time, the highways aided in the great flight from cities, which served to bring city centers into further decline. Housing for those who could not afford to move out was, as noted with Le Corbusier's structure, idealistic in abstract, but completely disregarded the people who would live in and around them. Without any revenue to maintain these areas, they would soon fall into disrepair, which, as many would note, would allow negative elements to take over prominent features of the city—park spaces, alleyways, sidewalks, and so forth. It seemed that despite the plans made by designers for the city, users were not living as happily as they were supposed to have been. In other words, users were not properly using these designs.

It was in 1956 that the first Urban Design Conference was held at Harvard University's Graduate School of Design. There, prominent voices gathered to discuss the concepts and theories of good city form. Some of the conversations that took place during the conference, at least according to the published Extracts (1956), revolved around issues of city decay and sprawl. Many, like Jose Luis Sert, dean of Harvard's Graduate School of Design, and architect Gyrogy Kepes, noted that the issues facing the spatial design community (architects, landscape architects, and planners) had widened and become bigger than those which concerned the previous generation. The overall tone seems positive however, as many professionals in these fields argued that through collaboration, these problems could be dealt with.

Seeing the impact of these decisions pushed planners towards a rearticulation of spatial equity as a principle focus. Planners began to talk about decentering spatial

practices and focusing instead on how users of space made meaning of their places.

Urban planners such as Kevin Lynch reimagined city space as being shaped *by* people,

not just *for* people. In his *Image of the City*, Lynch (1960) conducts interviews with

walkers of cities and asks them to draw the landscape of their places. From these designs,

Lynch implores other urban planners to pay attention to the ways that users themselves

make sense of space instead of imposing a decontextualized sense of order on them. In a

later text, Lynch (1961) hypothesizes on the various patterns that cities could take—many

of which may seem confused or formless to the planner, but he urges for more empirical

research into the use of the city, which might determine the shape, and not vice versa.

Much as Lynch asks that designers consider the ways that spaces are used, Jane

Jacobs (1961) in *The Death and Life of Great American Cities*, argues that streets should

be the focus of designer's observations. Streets, she notes, serve more functions than

merely acting as arteries that carry traffic through one part of the city to another; actually

forming an inextricable part of the city themselves. She writes, "If a city's streets look

interesting, the city looks interesting; if they look dull, the city looks dull" (p. 27).

Sidewalks work along the same lines: they don't just carry pedestrians along their route,

but they act as "active participants" in keeping citizens safe. All this to say that master

planners should not make bold plans for the city without taking into account how users of

those spaces function and how changes in one aspect of the city can have rippling effects

across its larger network.

Of course, user-centered cities would have to come from the bottom up. That is,

there is only so much that designers could learn from direct observation or interviews

with users of space. In order to promote spaces that were designed with particular people

in mind, residents needed to be allowed participatory power in representative roles on committees and organizations that could help sway design decisions to take all groups— not just the well-to-do into consideration. Through her typology of the "Ladder of Participation," Sherry Arnstein (1969), articulates the different levels that citizens (particularly minority residents) are allowed access to participatory mechanisms. These range from manipulative ulterior motives on the bottom rungs to tokenistic appeasement in the middle rungs and finally collaborative partnerships on the top rungs. At the highest level, cities have created community controlled spaces for citizens to govern all aspects of an organization, which allows them to directly negotiate for their best interests without any mediation. However, Arnstein notes that these endeavors have usually been "*taken by citizens,*" rather than given by those in power, cautioning planners against laxity in the pursuit of spatial justice (emphasis in original, p. 222).[5]

These conversations pertaining to social inequality seemed to have impacted the profession profoundly. Elizabeth Howe (1994) has detailed the ways in which planners who had earned planning graduate and undergraduate degrees in the 1960s entered planning with both an awareness of pressing social issues that affected users and the determination to take on a more political role in order to influence positive change (pp. 134-135). Compared to their counterparts who thought of the planner as an impartial consultant who should not meddle in political processes, active planners "played the role

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[5] Indeed, these fights were very long-fought to the point that it took at least until the 1980s before, as Schuman notes, "neighborhood-based planning began to gain acceptance as a legitimate practice and the concept of participation began to receive more than lip service" (p. 6).

of advocate for particular substantive issues" by lobbying for zoning rights, affordable housing, and other community-led initiatives.

These initiatives refocused planning's priorities to the degree that The American Institute of Planners "amended its charter and deleted all references to physical planning" in 1967—a rather startling development given that they had previously allowed membership only "to those interested in the physical development of cities" (Talen 2005, p. 270). Their emphasis came to rest more on the analysis of demographics, on steering policy, and on interpreting the use of city patterns by residents. And as Howe notes, this also meant, at least for some, actively lobbying for equitable practices in a political system that often sought to take advantage of those who had no voice in participatory politics.

This repositioning created a void in city design. But urban design would proceed forth even if city planners would not wish to claim it—ironic given that the profession of planning arose from attention to the design of city spaces. During the 1960s and beyond, architects found themselves pushing forth much of the theory of urban design. Nan Ellin (1996) provides a few of the postmodern tenets that circulated around discussions of the design of urban spaces, which I have adapted into Table 3.1.

Table 3.1 Comparison of Modernist and Postmodernist values of urban design

Modernist Values	Postmodernist Values
Hi Rise towers; slabs; superblocks	Houses; apartments; city blocks
Functionality; separation	Mixed-usage; community
The new; demolition	The past; preservation
Disregard for nature; haphazard development	Harmony with nature; postindustrialism and reuse

Modernist sensibilities, according to Ellin, focused on the new; as a result, development of housing and transportation systems occurred haphazardly, without much attention to the context in which these were being built. Buildings may have been constructed in areas where they did not fit into the built environment; rails and highways would split communities and natural landscapes in endeavors to quickly and cheaply provide an artery to the city. Under postmodern ideals of design, buildings are preserved and new transit and housing is placed in neighborhoods and corridors that make contextual sense.[6] Moreover, modernist approaches to design valued the functionality of separate parts rather than holistic interactions of difference. Postmodernists saw benefit to creating mixed-use buildings to help build a sense of community. Because of this, postmodern perspectives tend to disregard towers and instead focus on lower density units. As I will describe below, this has caused some friction between planners and architects—particularly those who subscribe to new urbanist principles.

[6] It is important to note that some in the study of design have begun to voice concern that postmodern attention to preservation has begun to negatively impact the needs of the city or has led to conflict between particular groups vying for the few places that are available for redevelopment. See Schwarzer (2004), for example.

3.5   New Urbanism

As a response to the lack of attention to design in the creation of city and town spaces, architects began to promote a new set of design principles in the 1980s and 1990s (Stiener 2011, p. 213). These New Urbanist principles aimed to tackle the social problems that communities had experienced since the great migration from cities with public spaces. Peter Calthorpe (1993) was one of the first to outline the focus of this New Urbanism, though at the time these ideals had not been bundled into anything resembling the large movement it has become.

To be sure, Calthorpe, and most New Urbanists, presented a very optimistic notion of design. Their focus was certainly in line with the concerns that planners had identified for decades. For example, Calthorpe notes that there is a "crisis of place in America" that largely comes about through sprawl, congestion, and loss of public spaces (pp. 18-19; 23-24). However, he approaches the problem as an architect might, by centering entirely on design and the power of the designer to refashion the landscape. The line of thought seems to be that if design created these problems, (better) design can eliminate them, with little attention to the actual users of space. As Southworth (1997) notes, New Urbanists "speak of community and neighborhood as physical rather than social activities, as if community resulted from the built form rather than from people who inhabit it" (p. 43).

New Urbanism holds many of the same tenets that other postmodern approaches to urban design do. For example, as I have mentioned, New Urbanism holds tightly (and proudly) to the past. However, unlike other postmodernist approaches to urban design, it seems to center its philosophy on an uncritical and amorphous perception of the past. In

his preface to *The New Urbanism: Toward an architecture of community*, Peter Katz (1994) describes—in very romantic terms—how New Urbanism will right the ills of past mistakes. In particular, New Urbanism, as Katz describes it, will aid in citizens "returning to a cherished American icon: that of a compact, close-knit community," which has been lacking since highways helped to create massive sprawl for most major cities (ix).New Urbanism seems to reach toward some idealized past when "the traditional American town had walkable streets. Streets that led to close and useful destinations rather than— much like our modern collectors and high traffic arterials—only to other streets" (Calthorpe, 1993, p. 21). Additionally, the traditional American town also had "diversity of use and users," which New Urbanism attempts to recreate through mixed use and zoning practices (p.22). However, as many critics of New Urbanism note, simply designing for diversity does not necessarily create a community (Robbins, 2004, p. 227).

Certainly New Urbanism borrows traditional planning and architecture forms and concepts, but New Urbanists are quick to state that they embrace the affordances that technology can provide (Katz, 1994, p. x). As early as 1993, New Urbanists were already thinking of how technologies would let individuals work from home, thus decreasing traffic congestion, or what technologies might be necessary to help develop more robust and ambitious transportation systems (Calthorpe 1993, pp. 27-28).

The bulk of Calthorpe's text puts forth design guidelines that will help create a more connected community. These guidelines cover all aspects of the built environment from sidewalks to facades and the size of surface lots. Todd W. Bressi (1994) provides an abridged version of some of these principles. Among them:

- Flexible and diverse land use that will be able to accommodate different needs of the community

- Prioritization of alternate modes of transit (to automobiles) to allow for more walkable streets

- Architecture that takes the history and culture of a place into account

- The development of transit oriented development (TOD), which "channels growth into discrete nodes along light-rail and bus net-works" (pp. xxx-xxxi)

- Housing that is clustered around public spaces such as parks and courtyards (pp. xxx-xxxi)

These goals all have separate means of being achieved. And often these means seem to explicitly contradict urban design practices from the mid-1800s, when architects were solely in charge of developing spaces. For example, New Urbanism promotes street-like grid patterns to ease traffic congestion by "providing a choice of paths for any trip, yet tame cars by requiring frequent stops" (p. xxxii). Obviously, this is in stark contrast to Olmsted's plans for the community of Riverside, IL before the automobile was a fixture of daily life—one which intentionally built winding streets to follow the slope and curve of the land and which would prove, he conjectured, for a more enjoyable stroll.

On that note, it is also interesting to point out that, despite this shift in ideology for architecture, once again, due to the totality of these principles, New Urbanists have found it simpler to adapt them to suburban places or—ironically, for a movement that purports to be against sprawl—to new subdivisions or planned communities. This is, as I've mentioned, mostly due to the postmodern affinity for lower density housing and disdain for high density towers on the part of postmodern designers. In fact, as Ellin

(1996) mentions, with postmodernist attention to periphery of cities rather than their centers, the suburbs have become of great interest to postmodern designers like new urbanists (pp. 190-191). However, as Bressi notes, these principles have been adapted to city spaces as well (xli).

Criticisms of New Urbanist principles have run high since the New Urbanist Congress met to officially solidify these guidelines in their 27-point manifesto for regions, neighborhoods, and streets (Congress for the New Urbanism, 1996). The most repeated concerns expressed against the movement deal with its surprisingly neo-Modern approach to design. Although New Urbanists don't necessarily believe that projects should have one master planner who guides all of the work from a bird's eye view, the strict codes that they subscribe to make it difficult to envision any form of user agency outside of this system. Dutton (2000) goes as far as to state that New Urbanism "is in many ways a resurrection of modernism, (p. 31), linking these ideas to antiquated notions of good city form stemming from order.

Planner Alex Krieger has made his disdain of New Urbanism public numerous times, but seem to objects to their principles on two separate grounds. Krieger's (1998) first set of reasons deal with the impact that these principles have had on the built environment. As he notes, the prescriptive codes that New Urbanists adhere to decontextualize design. This has led to the creation of places that all look the same. More importantly, because these codes can only be implemented on blank slates, Krieger accuses New Urbanists of creating more subdivisions, more private communities, and more homogeneous demographic enclaves (as he notes New Urbanism has in reality led to a type of new "new *sub*urbanism"; p. 74 emphasis mine). As concerning, Krieger

explains, are the values that New Urbanism promotes—values which he deems harmful in the long run. He writes, New Urbanists, who "blame the loss of community on flat roofs and horizontally proportioned windows" have produced:

> a new wave of form-follows function determinism (oddly modern for such ardent critics of Modernism), implying that community can be assured through design; [and] a perpetuation of the myth of the creation and sustainment of urban environment amidst pastoral settings . . . (p. 274).

In essence, residents may be tempted by the thought of living in these types of areas, far removed from the "messier aspects of city life, which may only help contribute to sprawl."[7] This is troubling, particularly as Edward Robbins (2004) has argued that communities built on New Urbanist principles far from urban centers may not be economically sustainable (p. 225).

Other critiques against New Urbanism decry it for ignoring growing income inequality and globalized economies (Sanyal, 2000, p. 319). More recently, Salingaros and Mena-Quintero have taken New Urbanism to task for giving the illusion of user-centered design wrapped in top-down design principles and corporate interests. While New Urbanists hold a "willingness to involve the community in the planning of their neighborhoods," the fact that existing finance practices favor large scale development tends to favor centrally planned, large scale initiatives rather than user-created designs (para. 4).

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[7] Andres Duany (1998) was invited by *Architecture* magazine to respond to Krieger the following month. In his response, Duany doubles down on New Urbanism, calling it the solution to many of the urban problems that planners raise. He goes on to affirm the positions of New Urbanism while pointing out the fallacies of Krieger's position.

Despite these criticisms, it has been shown that in some contexts New Urbanist planning principles have merit. In her study, Lund (2003), for example found that the combination of pedestrian-friendly streets and daily amenities did help to increase the amount of traffic by foot in certain areas. Additionally, she notes that much like New Urbanists like to claim, "people who walk around their neighborhood are more likely to interact with and form relationships with their neighbors," however, she is quick to point out that people's demographics, attitudes, and perceptions might be variables that planners and New Urbanist designers should consider (p. 428). It should also be noted that perhaps because it caters to very middle class socioeconomic ideals, New Urbanism has become very popular and has proven to have staying power thus far in the design decisions of towns (Ellis 2002 p. 279).

Furthermore, Emily Talen (2005) has sought to move beyond this divide between planners and new urbanist designers by noting that planners need design as much as designers need awareness of social issues. In her text, Talen devises a typology that focuses not on conflict between designers and policymakers, but rather on the amount of control that professionals in the field exert on the built environment. Pointing out that each approach to urbanism has had its share of failure when it has attempted to solely plan/develop/design the city, Talen urges for designers and planners to begin to work more closely together on issues that involve the policy and design of cities.

3.6   Where do planners belong; where does design belong?

Tensions have run high—and continue to do so—surrounding the topic of urban design in architecture and planning communities. In recent decades, some discussion has circulated within the planning field regarding the proper place of design in planning

programs. As planners moved toward social causes, much of the "heavy lifting"
regarding design principles was taken up by the architecture community, which has led to
epistemological friction between the two camps whenever place-making issues arise. But
planners have begun to return (or to make strong intentions to return) to their design roots
from which urban planning was born.

However, these discussions have not always carried the collaborative tone that
Talen proposed. Some planners have pushed for a "land grab" due to a mistrust of
architects' design intentions that have not promoted the values that circulate within the
planning community. Where architects are drawn to the aesthetics of use, planners feel
that equity of use is more important and that only planners can design in ways that
promote this equity. Carl Pattern (1988) lamented that planners have turned their backs
on design, particularly given the rich history that is embedded in planning. Planners, he
writes "have literally given over the form-giving, city shaping process to others. In most
American cities, architects, landscape architects and civil engineers—not urban
planners—play major roles in deciding what the city will look like. . . .This is a mistake.
If planning is truly concerned about the future of cities, then we as planners need to play
a major role in designing cities" (p. 5; See Ellin 1996 p. 186 for similar criticisms).
Pattern is quick to point out that he does not think that planners should be architects, but
rather that planners should begin to take design more seriously into their professions.

By the turn of the century, these calls for a return to design had become more
widespread. Noting that planners have lost ground to the popularity of New Urbanism,
Krieger (2000) expresses concern over the planners' inability to fully engage in discourse
about the creation and maintenance of good spaces—important skills which will require

more attention to visual media on planners' part (pp. 208-209). Likewise, Sanyal (2000)

criticizes planners for being "more eager to forge consensus than to present solutions"

and also urges planners to take up design in order to combat the ideas of New Urbanism

with better spatial arguments (p. 318).

Noting that aesthetics alone have not helped solve continuing urban problems any

more than focusing on social issues have helped to curb sprawl and other systemic

troubles, Alan Kreditor (1990) argued for collaboration and convergence between

planning and architecture in order to strengthen the best aspects of each field. What I find

key about Kreditor's call for convergence is his belief that without it, squabbling will

ensue over who will get to define urban design; more disastrously, unqualified

professionals from either discipline will attempt to own the term without the proper

training:

> We would produce architecturally trained urban designers who were
>
> dangerously naïve about the complex societal, economic, and political
>
> processes which shape our cities. Or, equally horrifying, we will have
>
> urban designers, trained as planners who have little facility with the
>
> interactive design processes or are inadequate to the task of matching such
>
> processes to urban scale. (p. 160).

This is undoubtedly a call for a return to design—a call that has been echoed

repeatedly throughout the last three decades. And while recently many planners have

begun to refocus on design (often going as far as making it a specialization of urban

planning degrees), these convergences have necessitated close interactions between

architects and planners—a situation which has sparked some controversial discussions on the "proper place" of design, highlighting some of Kreditor's fears.

In 2011, over 20 years after Pattern's call for a return to design, a debate emerged in the pages of the Journal of Planning Education and Research over the role of design in planning. Responding to an article in which the author neglects to include planning as one of the staples to design, Michael Gunder (2011) makes a passionate case for urban design to become a subset of urban planning. Gunder states that urban design has become a "product of neoliberalism," lacking in "planning's core values of serving the collective public interest and the environment" (p. 185). As urban design has no home per se, it has the potential, in Gunder's estimation, of running amok, completely disattached from public good while focusing only on satisfying the neoliberal desire of efficient form and function based on "market-led choices" (p. 187). Gunder's solution is rather simple: urban planning as a field, should subsume (interestingly, given Gunder's argument, colonize) urban design and claim it for its own, under more user-centered auspices. Only under planning, he argues, with its focus on equity and social justice, can design be steered away from the "prescriptive and formulaic" design principles that have become acceptable, in large part due to the New Urbanism movement. In particular, Gunder urges planners to develop "aesthetic judgement" and to become more literate in design and computer aided design technology. Only then will planners have more available tools at their disposal for creating socially responsible designs (191).

In his response, Tradib Banerjee (2011) offers several reasons for why Gunder's call is misguided. Among them, Banerjee points out that urban design has long been a field of practice—"Not withstanding Harvard's claims to have begun the practice and

pedagogy of urban design"—dating back millennia to ancient Greek, Egyptian, and Chinese cities. As such, it seems problematic for Gunder to call for planners to co-opt this practice (p. 209). Indeed, as Banerjee notes, many have called for urban design to become more autonomous so as to avoid falling into the snares of other professions such as planning or architecture (Cuthbert 2011, for example). More importantly, according to Banerjee, Gunder neglects to consider the political and economic entanglements that prevent planning from using design "for good." Banerjee's point is that planners are implicated in precisely the types of neoliberal design projects that Gunder speaks out against. Planners are entwined in these very practices and thus "directly involved in the location, land use, or traffic planning, or engaged in the entitlement process and drafting the development and disposition agreements," making it difficult to envision how planners' increased attention to and practice with design would help alleviate the economic inequities that currently shape city design (p. 210).

For his part, Steiner's (2011) response centers mostly on Gunder's belief that design once belonged to planning (and hence it should be easy to re-adopt it). Steiner argues that urban design is multidisciplinary and that in fact planning arose from architecture, which means that architects could make the same claim to design. "As planners have largely turned a blind eye to aesthetics for the past fifty years," Steiner believes that architects might have a more legitimate claim (p. 214). In the end, however, Steiner calls on planners to reach out to architects—not in an attempt to wrench the role they play in urban design from them but to learn about their practices in order to build more unity among place-making professions. This rift, Steiner contends, has negatively impacted both planning and architecture (p. 215).

3.7   Conclusion

Since the outset, the design of city spaces has for the most part remained an ephemeral responsibility, crossing boundaries between planners and architects. At the same time, the proper role of planners has been conceptualized and reconceptualized since the profession was first "authorized" and recognized in the early 20th century. From being charged with designing cities to taking on policies that better promote social equity, planners have had to reimagine the work that they do professionally. Now, seeing the impact that constructing their own digital rhetorical artifacts has in public meetings, they are in the midst of reconceptualizing their skillset yet again. This is not too different, I think, from what we have seen happening as we move toward multimodal design in the professional writing classroom. Indeed, much of the discussion in rhetoric and composition as well as in professional and technical writing has centered on how technology has changed the work that our students will be responsible for when they compose in companies and organizations after graduation.

That said, researchers in rhetoric and composition have started to take note of issues of space and the implications that spatial design has in the work that we engage in. As I will discuss in the next chapter, researchers from public rhetorics and professional writing and technical communication have begun to study and theorize spaces in both classroom and community settings. However, as I describe, there is more that can be done to explore the composition of visual spatial renderings.

CHAPTER 4. METHODS

4.1   Introduction

I have been tracing strands of discussions regarding space and design as they pertain to certain fields of study. In the introduction, I pointed towards the recent work in Rhetoric that has taken on issues of space. In Chapter 2, I provided an overview of how technical communication and professional writing have made design a strong domain of study. I also gave a brief overview of the different artifacts that have typically been found in the articles discussing design in technical communication research. Given the ubiquity of websites during the 15-year span in which these articles were published, it is not surprising that websites dominated discussions of design research; however, I did also note that other, less common artifacts also appeared in the sample. The previous chapter touched on the history of the field of urban design to highlight how contentious the ownership of design has been.

Here, I weave these strands together to argue that professional writing and technical communication can enter into conversation with place-making professions, and I put forth a method to shift the focus of these discussions toward a more sustained look at the field of urban design. This can be particularly useful given that (1) rhetoric and composition have focused primarily on the effects that design, policy, and development have had on minority populations or people in communities that are of lower

socioeconomic status; (2) professional writing and technical communication, while they have been quick to adopt and conduct workplace studies and research that focuses on networks, have been slow to study professions that communicate primarily through nontextual documents; and (3) urban design itself has been cobbled together as its "proper" home shifts from one field to another, bringing along with it a rich history and ideological residue that continue to have an impact on space-making practices. I suggest that in order to intervene and make a positive impact on place-based issues, we, as rhetoricians, professional writers, technical communicators, and social justice advocates should study how designs are created: what technologies are used, how users are conceptualized, what ideologies come into play, which actors who are already a part of this network we can align with, and what gaps exist where we can lend our knowledge and expertise.

4.2   Background

Rice (2012) points to a need for this work with her use of urban development as a backdrop for discussing subjectivity. While her main concerns deal with constructing a framework explaining individuals' engagement (and non-engagement) to social and public issues like development, her study is inexorably tethered to place. As she elaborates, her study is meant to act as a rhetoric-based intervention in spatial policy and design:

> I find myself wondering how to promote a culture of sustainability and care for our everyday spaces. As a rhetorician I also seek a better understanding of how discourse about [urban] development operates. How do people argue, debate, and deliberate about the spaces where we live,

work, shop, and travel? I also wanted to understand why development

continues to proliferate, even though its negative effects are familiar

enough to serve as plot points in popular TV dramas. (p. 5)

I share in Rice's concern for usable and sustainable everyday spaces, but I do think that

an important perspective of place-making is absent from this account: namely, those who

professionally take up urban design on a regular basis. Rice is right to note that urban

planners have wrestled with and disapproved of the ways that cities are being built (p. 30),

but while she turns toward public discourse I see an opportunity to learn more about the

different influences that go into place-making itself.

As researchers who are interested in the communication practices of different

professions, professional and technical communication scholars have often studied how

alphabetic-text genres such as emails, memos, reports, and PowerPoint presentations act

as artifacts within a community of practice and the impacts that these objects have on the

material world. Recently, more work has been conducted on the multimodality of such

documents, but these discussions often treat multimodality as an add-on to alphabetic

texts. For example, the design elements of websites, posters, and instructions and

manuals have been explored in professional writing and technical communication

literature, but mostly as a means to make the alphabetic text more readable. What is

missing is more of a focus on professions that rely primarily on visual forms of

communication and use alphabetic text in service to the visual. Looking at urban design

in this light yields an appropriate way to learn more about "how discourse about

development operates" and "why development continues to proliferate," as Rice writes,

thus widening the scope to include designers into this conversation.

Certainly, many researchers in professional writing, technical communication, and even WAC/WID have used a variety of methods to study spatial design, but these studies have focused primarily on the communication skills and efficacy of design students. Approaching her study within the context of design presentations, Dannels (2009), for example, discusses how presenters need to manage not only the knowledge of their final designs during a presentation, but also negotiate "what knowledge was valid for the presentation itself. This meant having an awareness of how to structure that knowledge, which audiences would be appropriate for that knowledge, and how presenters' identities contributed to the ways in which that knowledge was understood" (p. 166). Housley Gaffney (2014), on the other hand, examines students' self-efficacy in design courses with and without any explicit communication instruction. Housley Gaffney found that those in the explicit instruction group experienced an increase in self-efficacy from the beginning of the semester to the end, when students presented their designs (p. 176).

While other studies that look at the communicative practices of design fields have examined the communication that transpires during critiques, the fact remains that in these instances, the writing and communication expert only plays a role once the object of study has been designed. To illustrate, Dannels and Martin (2008) develop a typology of feedback given to design students at their critiques, finding that, not surprisingly, judgements are the most common form of feedback offered to students (in contrast to suggestions, brainstorming, and process comments). In a different study, Dannels (2011) posits that online critiques—critiques conducted as part of a strictly online design course—may fail to adequately capture the feedback that design students will receive in

the real world or in an academic setting. Instead, the feedback received evoked "playfulness and collaboration that was more reflective of cooperative partnerships than of managerial or educational hierarchies" or an "innocent and naïve" tone that "was interested in the design, which is not necessarily a relational interaction associated with work or school activity systems". Much like the other studies mentioned previously, this gives an insight into the communication that transpires after a design has been completed.

All of these methods are useful in giving us a glimpse of the multimodal communication practices that circulate within our own campuses. However, the researchers all seem to come in as outsiders near the end of the design process, which shapes their relationship to the data and to the artifact of design that they study. It is tremendously important to capture the finished product as students attempt to convey their designs to others; these types of communicative exchanges give us insights into the values of how feedback and communication all occur in design fields. But I believe that we may be missing out on relevant information on perception and values by not engaging in a more prolonged look at the process by which these designs are created. After all, Carolyn Miller (1979) long ago argued that the role of rhetoric should move beyond the mere conveyance of "objective" information from scientific and professional fields and instead observe how technical writing actually occurs within these communities. This process involves looking at the concepts, values, traditions, and styles "which permit identification with a community" (p. 617), and the failures, ethical implications, and social repercussions that stem from such discourse. In essence, technical writing, as a field, can tease out the ideological commitments that organizations and professional disciplines carry (p. 616). As such, we would be better able to see urban design more

holistically—stemming from disciplinary expectations, filtered through individuals' perceptions, and presented for public deliberation, before such renderings are even created.

This holistic method would give us a better understanding of the epistemic collisions that might take place behind a design, and thus, a fuller appreciation for the different roles actors occupy and a comprehension of the tools that designers use when they design. In other words, I would like to add to conversations on the built environment as I study both human and non-human constituents that influence the design of a place. Much has already been published on the composing practices of architects. Mullin (2009), for example, has described how budding architects learn to design by reproducing pieces or elements of works by established and notable architects. In her text on multimodal compositing practices, Roswell (2014), devotes a chapter to studying several architects' multimodal designs. These interviews and observations provide a sense of the work that architects produce on a regular basis and how they conceptualize this work. For example, one architect, Anthony Robins, describes good design as consisting of "space, proportions, and geometry and symmetry and axes and all these things coming together" (p. 98). Another helps clients to reveal the flow of their current spaces, emphasizing "spaces that use only the essentials" (p. 108). And Yaneva's (2009) ethnography follows the activities that take place at an architecture firm, tracing what materials and objects architects implement in their work. Yaneva examines how architects engage with their models—how the materials speak to the modelers and how the modelers can zoom in or span out of a particular model to get a sense of scale, depending on the project. Much like Mullin, Yaneva points out that the creative work that transpires in the studio is based on

previous builds, whether real buildings in the world or iterative models designed by the architects themselves (p. 95).

While rich in detail and varied in methods and contexts, studies that have looked at how architects compose typically seem to examine inspiration in a rather individualistic way, with the architect drawing on previous examples or personal paradigms without describing the network of interrelated processes and stakeholders within which they work. Yaneva's work comes closest to unraveling a complex web of interconnected objects and ideologies, but stakeholders remain somewhat in the background. In this study then, I focus on the designing practices of urban designers. What makes studying the practices of budding urban designers unique is that they are not designers by nature. Rather, as I have noted in Chapter 3, due to economic and field-wide forces, they are mostly urban planners who have turned to design in an effort to infuse more credibility into their work. Shifting our attention from architects to urban designers can reveal the frictions that arise when paraprofessionals in the social sciences take on technologies and methods for place-making that have been utilized by those in the arts for the previous half-century. Moreover, this could help us gain a better appreciation for the processes in place for creating spaces.

As I mentioned previously, one of the claims made by some urban planners such as Gunder (2011), (though it is much-debated) is that urban design should belong to urban planning and not to architecture because planners are more equipped to handle the responsibility of maintaining social equity in place-making than architects. That has led me to wonder what techniques students with social-science backgrounds employ when

they are asked to learn to design. Specifically, my research questions for this study are three-fold:

1.   How do urban designers conceptualize users in their design process—both in general and in the moment of design?

2.   How do urban designers perceive the networks within which they design? In other words, what are their interpretations of what forces influence design in a classroom and real-world setting?

3.   How might their sketches reveal the human and nonhuman actors that they rely on (colleagues, theorists, technologies, concepts, other designs) in this process of designing?

Because this study relies on gathering information about the actors that these participants rely on, I draw on discourse-based interviews and network pictures that reveal sense-making practices. Network pictures have not been thoroughly discussed in technical communication, but network analysis has. Therefore, before I describe my methods more fully, I will briefly explain how networks have been used in technical communication and how this work can be furthered through the use of network pictures.

4.3   Networks

Network theories have increasingly been utilized in professional writing and technical communication studies. In particular, researchers have gravitated towards using Activity Theory networks and Actor Network Theory to study writing, communication, and learning in organizations and workplaces.[8] These approaches have been useful in

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[8] See Spinuzzi's (2008) *Network* for a more thorough discussion of the divergences and alignments between Actor-Network Theory and Activity Theory.

teasing out how different segments of an organization communicate with each other in order to complete a task and what sources influence the creation of a text. In part, Read and Swarts (2015) suggest that network analysis has been valuable to technical communication because it helps reveal "distributed and interdisciplinary workplace communication" and the places where this work occurs. (p. 15). As these are some of the elements which I wish to uncover in the composing processes of urban designers, I will provide a brief overview of these means of analysis.

4.3.1   Activity Networks

Activity Theory (AT), developed by Yrjö Engeström (1987), sheds light on the social actions that take place around the creation of texts. Engeström's theory, which he put forth as an alternative to the predominant theories of learning that treated the concept in a very passive manner, revolves around social mediation (pp. 1-2).That is, AT places human activity within a system and context that is specifically shaped by a central object and the tasks that are inscribed by humans on those objects. Rather than inertly absorbing knowledge, an individual learns how to perform an activity through specific social expectations.

As Spinuzzi (2011) has explained, Engeström's examples illustrate an activity system that circulates around an object; this theoretical approach stems from agrarian and craft objects that have an immediate material trait (p. 453). Farmers' activity systems, for example, place a field at their center. This field must be "transformed time and again from brute earth to crops of grain" (Engeström & Escalante, 1996, p. 360). Or, in the example of the hunt, where a group of individuals coordinates its efforts to track and trap game, the weapons (spears or bows and arrows) and the object (game for food)

"determine much of what form the activity takes" (Stinnett, 2012, p. 135). All this is to say that there are multiple constituents in an activity (Figure 4.1). The (human) subject, the object, and the instrument by which the individual impacts the object for her or his own purposes are all represented, but only through the larger context of community expectations does learning happen.
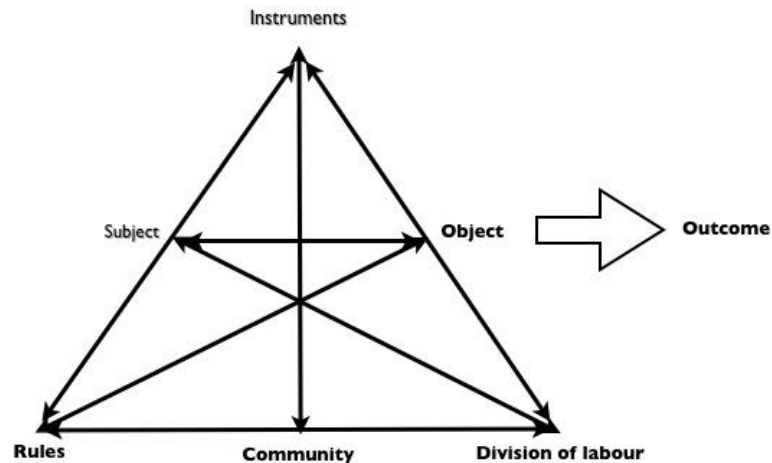

Figure 4.1 Engeström's Activity System

Presently, technical communication research has invoked AT to study modern-day activities such as team meetings (McNair and Paretti, 2010), online gameplay (Sherlock, 2009), legal processes (Propen and Schuster, 2009), and writing activities (Walsh, 2010) to name a few. More recently, researchers in professional writing and technical communication have begun to study the interaction and interconnectivity of multiple networks within which activity systems operate. As Spinuzzi (2008) notes, in activity networks the nodes that make up individual activity systems can also branch out and connect to other activity systems: "each corner [of an activity system] is something that has been produced by one activity system to be consumed by another" (p. 75) (see Figure 4.2). In essence, these connections can highlight the important distributed work

that occurs between systems. This makes sense given that the processes that occur in one workplace setting (particularly in a globalized economic structure) must inevitably connect with the practices that occur in another in order to complete a task. And the ends of that task might not necessarily be linear, but circular.
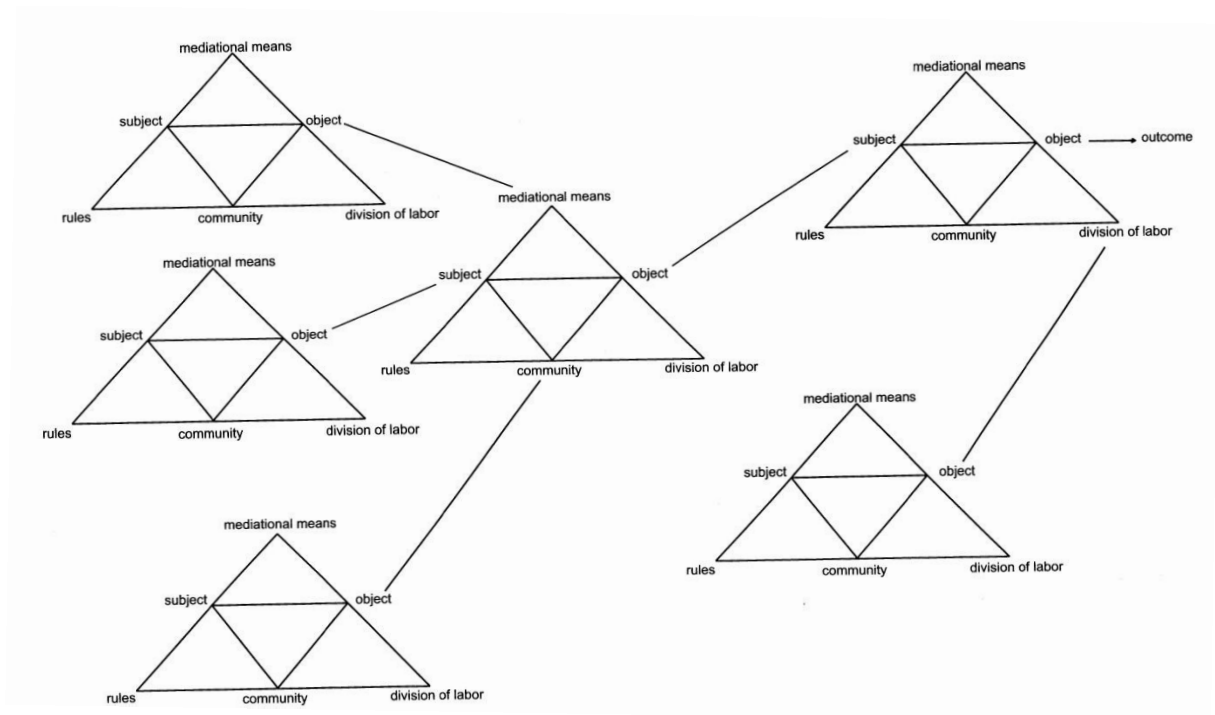

Figure 4.2 Activity Networks

4.3.2   Actor Networks

Bruno Latour (2005) describes ANT as a methodology for uncovering various social and material constituents embedded within the same network. While AT sees human activity as the causal influence behind events, ANT posits that agency is equally distributed among objects and individuals, or as Laura Micciche (2014) writes, ANT "reconfigures agency in relation to individuals, things, and publics by delinking assumed relations between action and causality" (p. 491). ANT then allows one to trace the

comingling of seemingly disparate actors—both human and nonhuman. In this sense, ANT focuses less on the socially mediated activities that objects produce and instead sees systems and processes as comprised of distributed actions—each contributing to the development of, or resistance to, change.

Moreover, ANT is concerned with how actors connect in order to make materialities real. Spinuzzi (2008) offers a concrete example of what this approach might investigate. In his discussion of a telecommunications company's approach to provide services to customers, he describes the necessary materials and policies needed to accomplish such a task:

> Is fiber so fragile that it is threatened by any contractor foolish enough to dig in its vicinity: then its allies must erect warning signs, put some force in those signs through regulation and stiff fees, and retain other contractors to hastily and reliably repair them. Do switches depend on uninterrupted power? Then they shall have it: they shall be supplied with backup power generators and alert technicians who know how to coax them back online. (p. 40)

In other words, the main thrust of Actor Network Theory focuses on the accumulation and dissemination of power within networks. ANT looks at how funding, policies, and people mediate each other in order to produce a particular result.

4.4   Background

While these discussions of networks are useful in providing researchers with the necessary tools to trace the real-time relationships between nodes of actors who exist in the workplace and other professional settings, they cannot necessarily tell us how people

who work within those settings make sense of their positions within a network. That is, there may be a disconnect between how the network functions and how actors perceive it to function; and perceptions may be partly responsible for the breakdown or successes of any processes in a network. These perceptions also frame how actors interact with one another and whom they perceive to be included in and excluded from a particular task, which can shape the final outcome of a project.

Researchers in the field of Industrial Marketing Management have recently turned to what they have termed "network pictures" in order to reveal data regarding these very points. Such studies of cognitive representations have mostly centered on managers' perceived organizational relationships. Network pictures have been used to gain broad, meta-level information on managers' and employees' understanding of their own organization's functions (Hanneberg, Mouzas, & Naudé, 2006; Salmela, Mainela, & Puhakka, 2012), or how individuals perceive an organization's relationship with other companies (Leek & Mason, 2006, 2008). Henneberg, Mouzas, and Naudé (2006), for example, showed how a manager within a Japanese securities trading market conceptualized the overall organizational network within which she worked (see Figure 4.3). Underlying her map was a belief that the securities services department was a "relationship enabler," connecting various clients together, a belief that proved to be deeply ingrained. Even though follow-up research suggested that another department in the company was responsible for managing client relationships, the participant "was adamant that this department should not be part of the network picture" (p. 422).
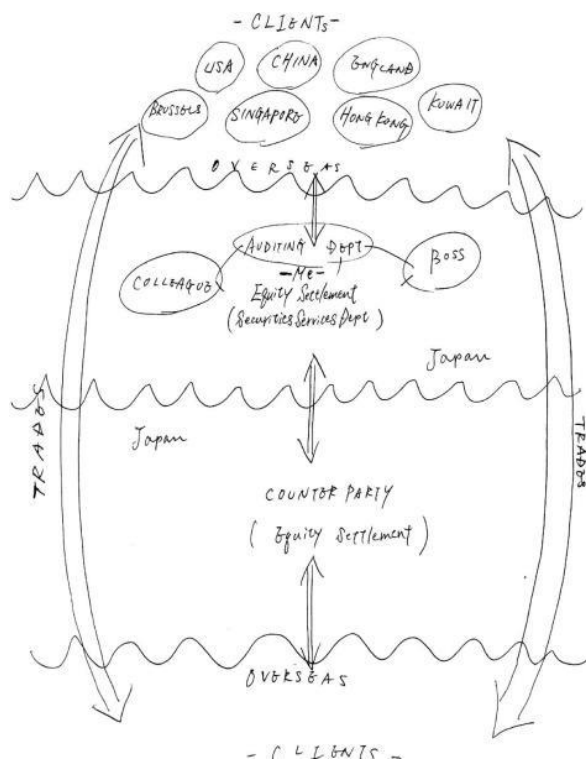
Figure 4.3 Network picture of securities trading market in Japan.

Meso and micro-level, task-based information can also be obtained from this

method of study (see Leek & Mason 2009a and Leek & Mason 2009b); for example,

Oberg, Henneberg, and Mouzas's (2007) study of mergers and acquisitions reveal that

employees' network pictures are slow to change to adapt to new organizational structures.

As a result, the researchers call for more "symbolic enactments" and communication

strategies within organizations after mergers and acquisitions to speed employees'

familiarity with new hierarchical configurations (p. 938). Because the majority of these

studies have been concerned with managerial decision-making (by those with some

power to influence decisions), we can see why IMM researchers might find network

pictures to be a crucial tool "for the conceptual development of an understanding of

networks in general and actor's network activities in particular" (Henneberg & Mouzas

2006). Obviously, such perceptions can deeply impact the regular work that transpires on a daily basis within an organization. As many researchers in technical communication and professional writing have studied, individual perceptions can influence employee communication in business workplace environments (Hargie, Dickson, & Nelson, 2003), technical writing students' beliefs about the role of research (Ross, 2014), the credibility of workplace messages (Suchan, 2014), and hospital care (Burleson, 2014). Indeed, studying perceptions, as Burleson (2014) explains, can reveal assumptions and motivations which would otherwise not surface (p. 190-191). Perceptions of networks, however, remain absent from these discussions. I contend that asking individuals to render network pictures can help to draw out valuable information about the perceived function of tasks, processes and organizations. In this way, we may be able to get a better sense of how urban designers view their design processes and which human and nonhuman actors designers rely on when they engage in designing.

As we can see, these network pictures make visual the associations that individuals carry with them on a regular basis. Much like Genesea M. Carter (2015) describes the literacy maps that she asks her writing students to create, network pictures can help represent various funds of knowledge that composers bring when they are learning to write—or in this case, design. In both instances, the act of mapping "validates the knowledge that [students] bring with them into the classroom while situating their lives and experiences into a larger, global context" (p. 31). By tracing participants' important stakeholders, objects, technologies that influence their designs, we can gain a snapshot of not only how these participants perceive themselves and their work acting

within a network but also how that work comes to be. I will discuss these elements further in my methods section.

4.5 Method

For the purposes of my study, I am interested in tracing all of the influences on the design renderings produced by participants, ranging from individuals (instructors, teaching assistants), to objects (digital technologies, pens), and ideas (theories, experiences). In this way, we can come to have a fuller understanding for how techniques are deployed and how publics are conceptualized throughout this process. To that end, I hope to put the work that has been done in the realm of public rhetorics regarding place-making into conversations with multimodal composition practices that occur in professional fields.

The participants are primarily urban design students who are beginning their indoctrination into a community of practice that, as we have seen, holds a long, tenuous history with design. The focus on a graduate student population is ideal for this project given that we can learn how urban planners are taught to design for, and construct their thoughts on, users in their formal training and education at the beginning of their careers. As paraprofessionals, these individuals know more about their field than undergraduate students, but not as much as employed urban planners, who may have internalized much of their knowledge. In essence, focusing on these students can capture a very specific point in the development of urban planners and expose more saliently what composing within an urban planning education looks like and what it may lack.

I utilize a number of research methods for acquiring data in order to find answers to the three previously mentioned research questions. These include interviews with

students, recordings of their composing process, textual analyses of texts that center on

users and public discourse, and an examination of their syllabi. Figure 4.4 provides a

visual representation of these methods. I also discuss them in more detail below.
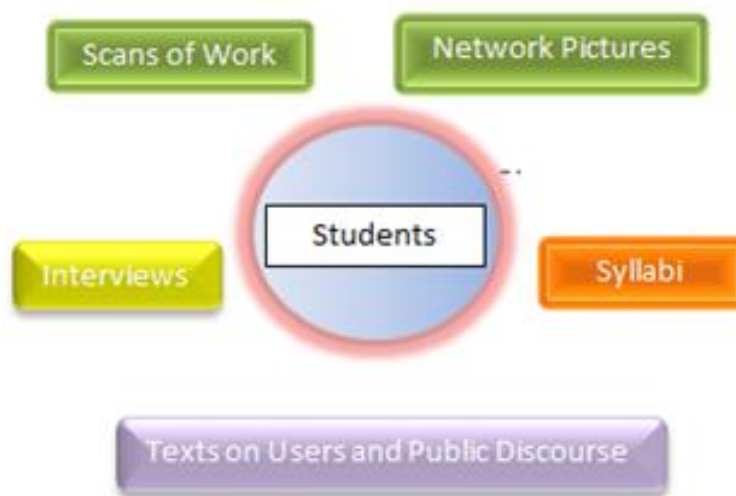
Figure 4.4 Representation of data collection process.

4.5.1   IRB and Calls for Participants

I reviewed the 20th Edition of the *Guide to Undergraduate and Graduate*

Education in Urban and Regional Planning published by the Association of Collegiate

Schools of Planning (2014). This publication provides information on the various urban

planning programs in the United States and Canada. Details include a program's

specializations, its faculty members' area of research interest, and contact information for

each program. After receiving IRB approval, I emailed individual program chairs of each

school that listed "urban design" as a category of specialization for its students in the

guide. Program chairs were asked to distribute my call for participants widely to graduate

students studying design or to provide me with direct contact information of students who

might be interested in participating (or vice versa). To be eligible, students needed to be

working on a design or redesign project over the course of several weeks or months. I

received responses from 4 eligible students, whom I will discuss in more depth in the

following chapter.

4.5.2   Syllabi

Syllabi were collected so that I could review the different texts that help build

students' knowledge and skills of urban design. At the same time, I reviewed the different

policies and goals, means, and outcomes that each instructor had proposed for students in

these documents.

4.5.3   Scans of Work

Because my participants were housed in programs across the United States,

meeting face to face to discuss their iterative design processes was not possible. Instead, I

asked students to continually document their iterative design choices throughout their

design process by photographing their renderings or saving screen captures that they

could email to me at three mutually agreed-upon checkpoints in the semester. In this way,

the material visibly changes from one iteration to another would help to reveal the

different actors that come into play when students redesign.

4.5.4   Reflection Essays

Because there are numerous other processes that go into composing that may not

necessarily appear on the page or computer screen, students were asked to keep a journal

of their composing process in which they detailed significant turning points or obstacles

in completing their work. These would be submitted along with the design iterations that

students completed. Often, students were given a few prompts to help them organize their

thoughts. While the reflection essays were a beneficial way of learning about what students may have been drawing from as they composed (how their purpose may have changed; what theoretical ideas came to mind), reflection may have also provided them with an outlet for thinking more purposefully about their work. Lauer (2012) has recently shown that incorporating textual reflective assignments into students' development of a visual project helps to increase their design quality (p. 182). Lauer hypothesizes that reflective essays give students "some choice as to how they will tailor their analyses and what elements and principles they will discuss that seem most relevant or that contribute most significantly to the success of their design" (p. 182), and that this, in turn, gives students a more deliberate awareness of how to use these elements.

I should note that the projects in Lauer's studies, though visual, are not spatial in the same way that urban designers' projects are. Whereas the students in Lauer's study designed brochures for the Phoenix Metro light rail system, potential participants in my study could have been designing the spaces along the actual light rail system. Here, I only mean to emphasize that due to the different contexts, there might not have been the same level of gains that Lauer saw. Still, given that designing brochures and spaces do both require highly deliberate visual choices, it is possible that reflective essays could bolster efficient designs in either case.

4.5.5   Interviews

Skype interviews were conducted with participants no more than three days after they submitted their designs and reflection essays. I used a modified version of Odell, Goswami, and Herrington's (1983) discourse-based interview protocol during these conversations because such a method is better suited to obtain implicit composing

knowledge (in contrast to immediate, deliberate writing knowledge—see Flower and Hayes, 1981). Much like Odell, Goswami, and Herrington, I am "using interviews to identify the kinds of world knowledge and expectations that informants bring to writing tasks and to discover the perceptions informants have" about their composition tasks (p. 228). This approach involves asking students why they chose certain options in the composing process over others and what knowledge they are drawing from as they compose over a series of multiple texts (p. 229).

Interviews were semi-structured, based on the participant's individual design and their reflection. Questions were developed to fall along some of the following categories:

1.   How would you describe the steps that you took in order to design this piece [or redesign your space]?

2.   When did you feel frustrated? When did you know you were finished?

3.   Why did you place your roads/building/pathways/etc. where you did? What other options did you consider and why were they rejected?

4.   What would need to change about your design if you were faced with a similar task in a real-world scenario?

Moreover, questions were asked that dealt with participants' background and interest in urban planning and design, and their attitudes and beliefs in general about planning (see Spinuzzi, 2013, pp. 99-101). These questions helped link students' work to larger, ideological frameworks—for example, whether students are drawing from a theoretical perspective that favors sustainability, usability, New Urbanism, and so forth.

4.5.6 Network Pictures

Two distinct network pictures were collected from each participant before the final interview. In the first map, participants were asked to detail the different influences that played a role in their design. Such maps, as I will show, indicated the various human and nonhuman actor relationships that played a role in participants' design process. For their second network picture, I asked participants to draw a map of the different influences that would act on their work if they were to try to create their designs in a real-world scenario. The purpose here was to determine how participants' perceptions of real-world place-making would differ from their classroom-based project. I also added to these maps certain actors that the participants implied or overtly mentioned in our interview but did not appear in the network picture.

Because these participants are not part of an organizational network yet, it is difficult to overlay this map with any real-world network. Instead, these maps are examined as emerging interpretations of networks that guide the work of budding urban designers and from which participants draw to respond to a design problem. Additionally, I looked for patterns between these individual network pictures. Much like Oberg, Henneberg, and Mouzas (2007) state, recurring themes created "a sense of congruence" among these participants (p. 390). Given that each had become familiar with planning and design through different experiences, I was curious to see what in the network remained consistent and what seemed to diverge because such elements would reveal what actions participants believed they could take within this network and which they felt were foreclosed.

4.6   Conclusion

The use of these methods may help us gain a more precise idea of how urban designers compose when they are tasked with the design or redesign of spaces. Connecting ideas, concepts, stakeholders, and technologies to students' perceptions of the tasks they must complete and the networks within which these tasks must be completed could be very beneficial to researchers who study place-based rhetorics and the implications of development on publics, in that we could connect the effects of design to earlier stages of design. Additionally, we may broaden the engagement with design that technical communication and professional writing have been building over the last decade. While studies that look at the communication of design may help us understand the socially-constructed standards of a particular field in communicating technical information, there is room to begin our involvement in these discussions earlier, looking to see the entanglements that occur in the actual process of design between students, technology, and ideology.

Moreover, over the last decade there has also been an interest in writing studies on transfer issues. I do not have sufficient space here to delve deeply into the rich research that has been produced by such scholars as Downs and Wardle, Nowacek, Bergmann and Zepernick, Beaufort, Driscoll, and many others. However, what is important to note for my own study is that researchers have begun to study under what conditions students are able to transfer knowledge from one context to another (whether that be from high school to college or from college to workplaces). This interest in transfer has also spread to the production of multimodal texts. For instance, Clark (2014) studied whether her students' ability to write coherent print-based essays and their

familiarity with social media and new media platforms would necessarily yield high-quality digital texts. Her findings indicated that this was not the case; students' blogs suffered in quality compared to their print-based essays. To illustrate, Clark noted that students' new media content such as videos or visual elements was rarely introduced or discussed, although all of these students had appropriately introduced and discussed quoted material in their print essays" (36). Here again, we note how multimodality is important to writing researchers, but only, as I've mentioned, as an add-on to textual information. But more importantly, for the purposes of my own study, we can see how new and prior knowledge plays a role in the production of students who attempt to communicate using digital platforms. In the same way, I hope that my own study will help to move the current conversation forward about the knowledge and perceptions that individuals bring to new digital communication tasks.

CHAPTER 5.   FINDINGS

5.1   Introduction

In this chapter, I discuss the findings and implications of my study of urban

design students enrolled in Master's programs in planning across the United States.

Although a total of 4 students took part in the study, only two completed the study in full,

and thus I will focus my discussion on two of these participants –Jake and Lola—who

happened to be enrolled in the same program in the same course at West Coast

University.[9] Although they each participated in the study and were enrolled in the same

course, neither participant gave any indication that s/he knew that the other was also

participating in the study or how many of their classmates might be enrolled in the study

at the time.[10] Focusing on two case studies can help us to focus in on the details that are

pertinent to the experiences of my participants. That is, by looking at depth of work

produced by these two participants over the course of several weeks (in terms of

interviews, renderings, reflections) and the documents and tools that guided their work,

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[9] All names of people and schools are pseudonyms; that the students who finished the study happened to be enrolled in the program is coincidental.

[10] A recruitment email was sent to the chair of the Master's in Urban Planning program at West Coast University, who distributed the message to the student listserv. Lola and Jake responded independently of each other.

we can become immersed in their work. Concentrating on two case studies most likely prevents many findings from being generalizable to a larger population, but here I am more interested in developing propositions which can lead to future research questions (Punch, 1998, p. 154).

5.2   The Participants

Jake, a Caucasian man in his late 20s, was in his first quarter studying at West Coast U. He had held numerous positions after graduating with a BA in Political Economy from a different state university. He began his career working as a housing counselor for individuals returning from prison. Following his time in direct services, Jason completed a public policy fellowship with San Francisco City Hall, and worked with the San Francisco Public Utilities Commission to develop policies and programs for conserving water. After completing his fellowship, Jake joined the Council of State Governments Justice Center in New York, providing technical assistance to state leaders seeking to improve public safety. Following Hurricane Sandy, Jake had decided to return to school to work on the issue of climate change. He reported to have first become interested in architecture when he was younger, but was drawn to planning because it "worked on a larger scale" (personal communication, Nov. 23, 2014, p. 1)

Lola, an Asian-American woman in her mid-20s, was also a first semester student in the Masters of Urban Planning program at WestCoast University. As with most participants in this study, Lola's path to her Master's degree had not been a straight line. Rather, after graduating with her BA in Urban Studies and Planning from a different university, she had worked 1.5 years at a large planning, engineering, construction management organization in their transportation planning department. This position had

taken her to a different state, and she reported feeling happy to be back closer to home for her Master's degree. During her employment there, Lola was responsible for preparing working papers, evaluating land use, transportation, and parking policies, and creating maps and public handouts using ArcGIS and Adobe Illustrator. She was drawn to planning after having visited Europe where she experienced walkable communities in cities like Florence, Italy.

5.3   The Course and Assignment

In many ways, much of what urban planners have been advocating for is coming to pass. Students are being offered courses that center on designing urban spaces to add to their toolkits. Jake and Lola were enrolled in a course specifically designed for students "interested in the built environment but lacking design and graphical presentation experience and skills," as stated in their syllabus. This introductory course, taught by an architect, asked students to hand draw and use technologies such as Adobe Photoshop and Google Sketchup in order to create their designs. In this way, they would gain experience with real-world processes and tools used by planners.

Jake and Lola had to communicate small design changes using "everyday retail streets" of the city. The choice of street and the improvement was completely up to the students, but they had to first present it graphically, meaning that they had to represent it through drawings and software (not simply take a photograph of it), and then "propose a *modest* design intervention to improve it" (emphasis in original). Although cost was not included as an explicit constraint in this project, the inclusion of the word "modest" signals that the instructor wanted students to focus on changes to the built environment that were not too expensive as to make the assignment completely unrealistic. This

assignment did ask students to learn more about the space that they were proposing to redesign. Essentially, students had to visit a space, observe the users, features, and interactions of that space, brainstorm improvements, and then show those improvements visually by drawing and by using Photoshop and Sketchup.

5.4   Projects

5.4.1   Jake: Sustainability

Given his interest in sustainability, it is not surprising that Jake eventually chose to focus his project on redesigning a particular space to be more sustainable. He was drawn to a part of town known as "Little Ethiopia" for its vibrant culture and architecture. Traveling to a particular spot, Jake initially saw the opportunity to create an opportunity to invite passers-by to enjoy the same sights that he appreciated during his walks. By designing a parklet at the end of the sidewalk, he had hoped that people could sit back and take in all of the sites. Parklets typically take up one or two parking spots on a street and are extensions of a sidewalk, typically comprised of a bench and greenery. Figure 5.1 provides an example.

Figure 5.1 An example of a parklet

However, Jake noted that after his first attempts to render this park, he abandoned the idea because "I realized how much of my drawing space was dedicated to a [7-Eleven] parking lot on the other side of the street, and started to see the parking lot as an asset rather than something I wanted to hide. The setback parking lot, after all, was what provided me the open space to enjoy an expansive view of all the historic buildings across the street" (reflection, Nov. 20, 2014, p. 2). Jake's switch to focus on the parking lot instead of creating a new parklet indicates that he was attuned to the need to improve a current design rather than to impose a novel feature in this particular setting. Having shifted gears, Jake focused primarily on the 7-Eleven parking lot (Figure 5.2) and working through some ideas that would help inspire his design.

Figure 5.2 The 7-11 parking lot that Jake focuses on for his redesign project

The brainstorming process, at least for Jake, involved taking time to concentrate on the observation of the space. Much like his syllabus recommends, Jake wanted to see the retail street holistically in that he was interested in not just the street's technical features but also how people interacted with it. He chose to concentrate on "what [I] liked about the street before jumping to a vision for an improved version. Too often planners bring their assumptions about 'good design' to a project before spending the time to get to know a place, in all of its funkiness" (reflection, Nov. 20, 2014). To get at this funkiness, Jake drew a few aspects of the environment, which he reported "encouraged me to appreciate the complexity of simple details. Indeed, when we review some of his brainstorming sketches (Figure 5.3), we can see how certain elements drew in Jake more than others.
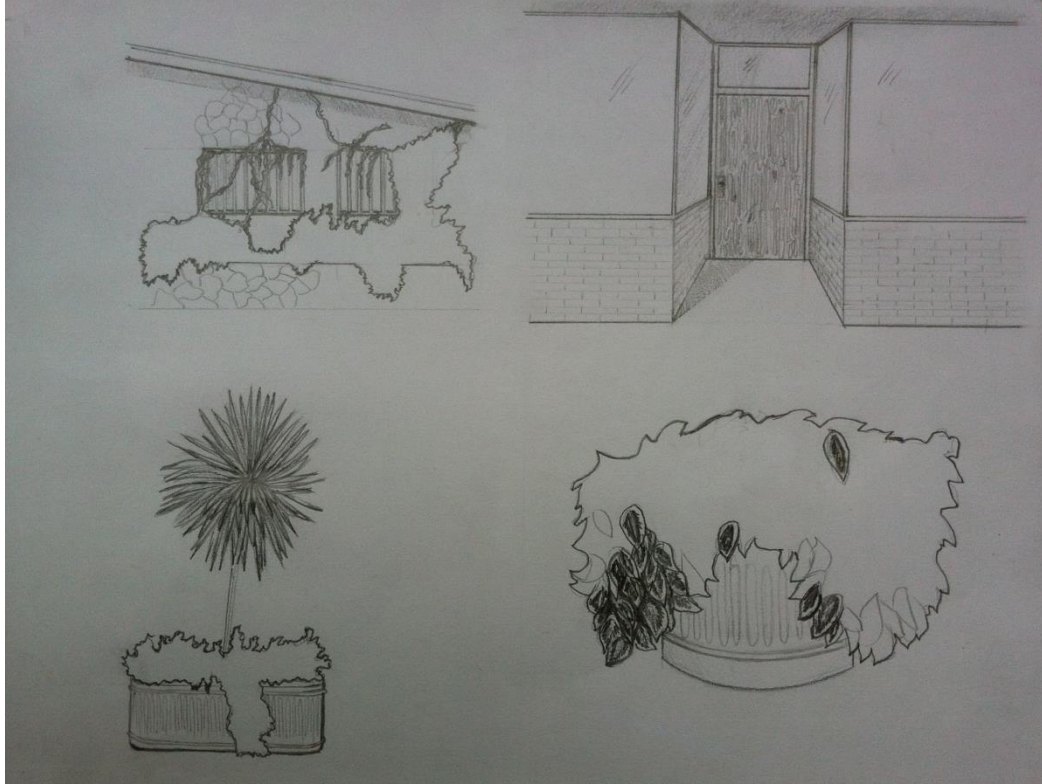
Figure 5.3 Jake's Brainstorming sketches

Shrubs, plant life, and greenery dominate Jake's inventional sketching. Though he

does include a drawing of a door (most likely a business on the street), rendered in fine

detail, three of the four other drawings capture the natural aspects of what he witnesses

while on this street, which is interesting, given what an urban setting this space actually is.

With all of this sensory input detail and logged, Jake settles on a redesign project that will

still speak to the natural elements and green potential of this particular corner of the street.

He noted that after abandoning his parklet idea and taking note of key features

surrounding the parking lot,

> I began to think of design interventions that might invite 7- Eleven
>
> shoppers to stay and potentially notice the other qualities of the street that

originally attracted me. . . . Having worked at the San Francisco Public

Utilities Commission while they were rolling out their storm water design

guidelines, I thought about the potential to capture storm water at the site

of the parking lot. If permeable pavement were installed in place of the

current concrete slab, some earth and grass could potentially be exposed,

thereby breaking down the gap between the city and the environment.

(reflection, Dec. 12, 2014, p. 2)

Figure 5.4 showcases the final design that Jake produced for his class, wherein we can

see a reimagining of that space. Permeable pavers are installed, replacing the concrete

slab in the parking lot. At the same time, the nondescript, lifeless wall that adjoined the

convenience mart is now adorned with a vertical garden of plant life. There are other

interesting elements in this Sketchup rendering, which I will address later in this chapter.

For now, however, it is important to get a sense of what Jake's project consists of.

Figure 5.4 Jake's final redesign

5.4.2   Lola: Walkability

In sharp contrast to Jake, Lola's project was relatively straightforward in that there was little second-guessing on her part regarding the location she wanted to select or the redesign elements that she desired to implement. Because Lola lacked a personal vehicle and because she was a first-quarter student still getting acclimated to the university area, Lola felt that her options for selecting a site to redesign were somewhat limited. Essentially, she chose a street that she frequently used, and noted that it could be made more conducive to pedestrian traffic, particularly as it is situated in a densely packed area of campus (Figure 5.5).

Figure 5.5 The street that Lola chose to focus her redesign on

Unlike Jake, Lola did not make note of any particular features at the site that drew her attention. Instead, she set about with a particular task:

I wanted to focus on the key physical characteristics of the street, particularly

what I considered as good design qualities. Therefore, I paid particular attention

to wide sidewalks, narrow travel lane, abundant landscaping, and varying

storefronts. I wanted to capture the fact that Broxton Avenue is currently an

aesthetically pleasing street with great walkability and retail potential. Because I

am personally most interested in pedestrian planning, I really wanted to show how

wide the sidewalks were in comparison to the travel lane. (reflection, Nov. 20,

2014, p. 2)

In practice, this meant making only a few changes to the current space.

Figure 5.6 Lola's redesign

Figure 5.6 highlights how Lola came to envision this space in order to

communicate a more pedestrian-friendly for the street. As one notes, Lola does not

change very much about this street. The parking meters that dotted the sidewalk are removed and chairs and tables sit atop new pavers along the road.

5.5   Redesigning vs Re-presenting

Before proceeding further I must make a quick note about the foci of the class. Redesigning a space was central to the work of the course, however this type of class does raise an important distinction in terms of design work for urban planners. While urban designers do indeed redesign spaces, Jake and Lola's course is more focused on how these redesigned spaces are communicated to the public. This is evident in one of the justifications for learning rendering technology tools Jake and Lola's instructor puts forth in his syllabus when he writes that "our [urban planners'] language and rhetoric of representation is not only a professional necessity, but our images and presentations also give urban planning and design ideas the power of agency." That is, these technologies will allow planners to be more convincing in the expression of their ideas.

That said, there are two levels of design taking place in these projects. The first deals with what the syllabus denotes: making an idea palatable to lay audiences. And often this is the hardest aspect of the class since students may not have a keen awareness of the ways in which places should be represented. Jake for instance, noted how his instructor warned students to not "muddy" their renderings by having too much activity or too many features present, as such busy activity would keep the ideas for the redesign from being communicated to others. Taking this lesson to heart, however, Jake, at an early point, went in the opposite direction and created a sparse rendering of his 7-Eleven parking lot, only to discover that he needed to adjust the way he thought about this advice:

My first go at it, I [chuckles] I probably had the most sparse renderings in the whole class because I was like "the point of this is to communicate the structure of the street so "less is more." I didn't put any cars in it. I didn't put any people in it. Because you know I was showing the built form of the street and then I show up to the critique and everyone has like people playing Frisbee and totally populated with life, and I was like "well I guess I missed the point of this assignment" because I really thought that this was just "can you render this street as it exists?" (personal communication, Dec 9, 2014, p. 2).

In other words, there was a fine balance that Jake needed to strike in this redesign project. While the new vision that he created needed to be visible (not occluded by too much other activity), he needed to use people and objects in order to highlight the space, not detract from it. Without people engaging with a space, there would be no way for an audience to understand how they—as potential users of the space—would engage with it or how it would engage with them. So, resigned to incorporate this balance, Jake set off to "decorate" the scene, as he put it, with just enough people to help him communicate the space more appropriately (personal communication, Dec. 9, 2014, p. 2). Communicating this information visually is particularly important as we can see even more clearly from Lola's redesign. Without representations of residents using her redesign, what exactly the tables and chairs are doing in the middle of street would not be completely clear.

Jake latched on to this important lesson about being able to re-present a vision of his space to the degree that he considered it to be the only thing that mattered in the class.

"The actual redesign of the space," he mentioned, "doesn't matter as much as how you present it. The class isn't really about coming up with ideas as much as can you communicate them visually" (personal communication, Dec. 9, 2014, p. 4). However, that is not to say that generating actual ideas for redesigning ideas was unimportant, trivial, or an afterthought. To illustrate, early in her redesign process, in addition to making a pedestrian-friendly street, Lola wanted to remove the awnings that adorned the storefronts along the sidewalk. Lola felt that they all looked the same, which conflicted with the ethos of the space that she wanted to communicate; additionally, their small size meant that they did not necessarily provide enough shade or protection from the rain, thus making them a superfluous feature that could be removed easily.

As she found out though, such an idea for a redesign conflicted with the actual work of planners. After beginning to remove the awnings through Photoshop, Lola spoke with her teaching assistant, who "told me to keep the awnings because they provided shade. In general as a planner, we don't want to remove elements, but rather to enhance them. Taking his advice, I abandoned this idea and kept the awnings" (reflection, Dec. 12, 2014, p. 1). Although Lola disagreed with the teaching assistant's assessment of the utility of this feature, she kept the awnings, learning more about how a planner should think about design. So, while communicating a space visually is certainly the focus of the course, learning to think like a planner-designer is also an important aspect of what students learn.

5.6   Network Pictures

So how exactly did these participants arrive at their redesigns? The network

pictures produced by Jake (Figure 5.7) and Lola (Figure 5.8) highlight what they consider

to be the most important influences on their work in the class.
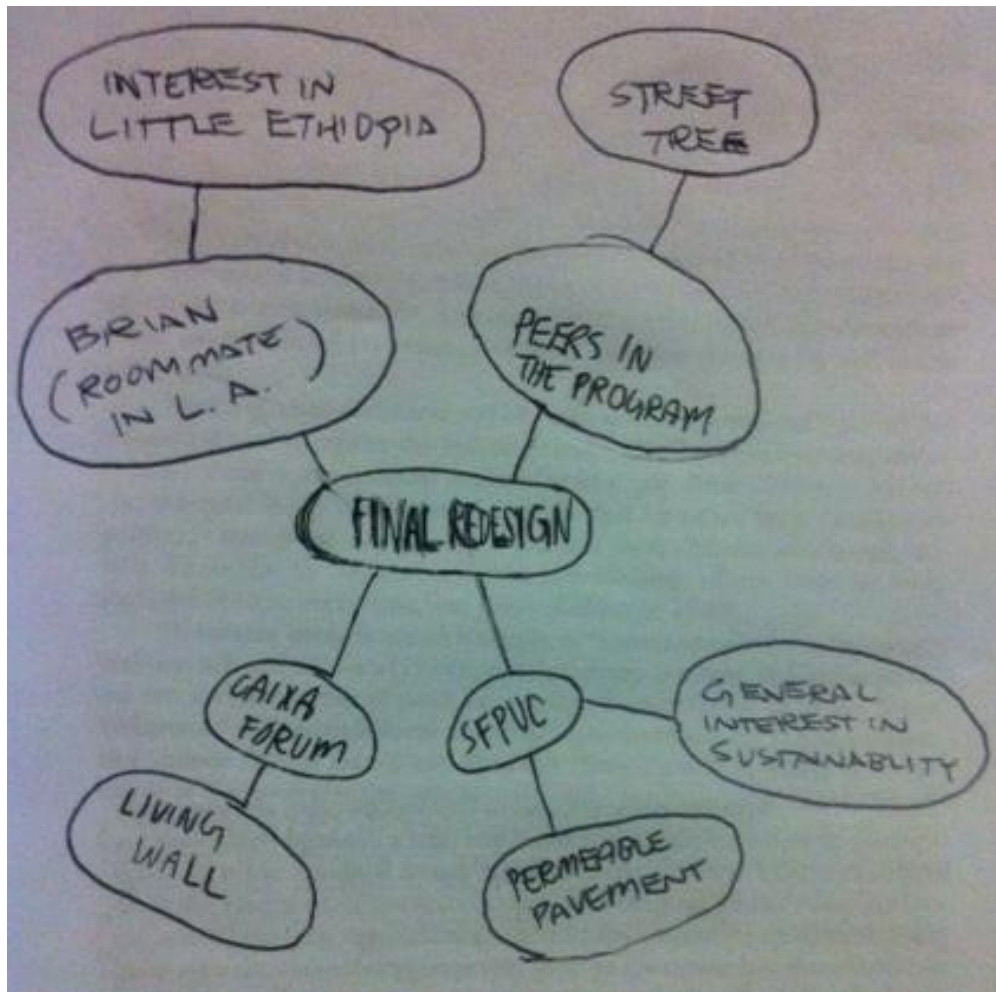
Figure 5.7 Jake's network picture of the influences that guided his design
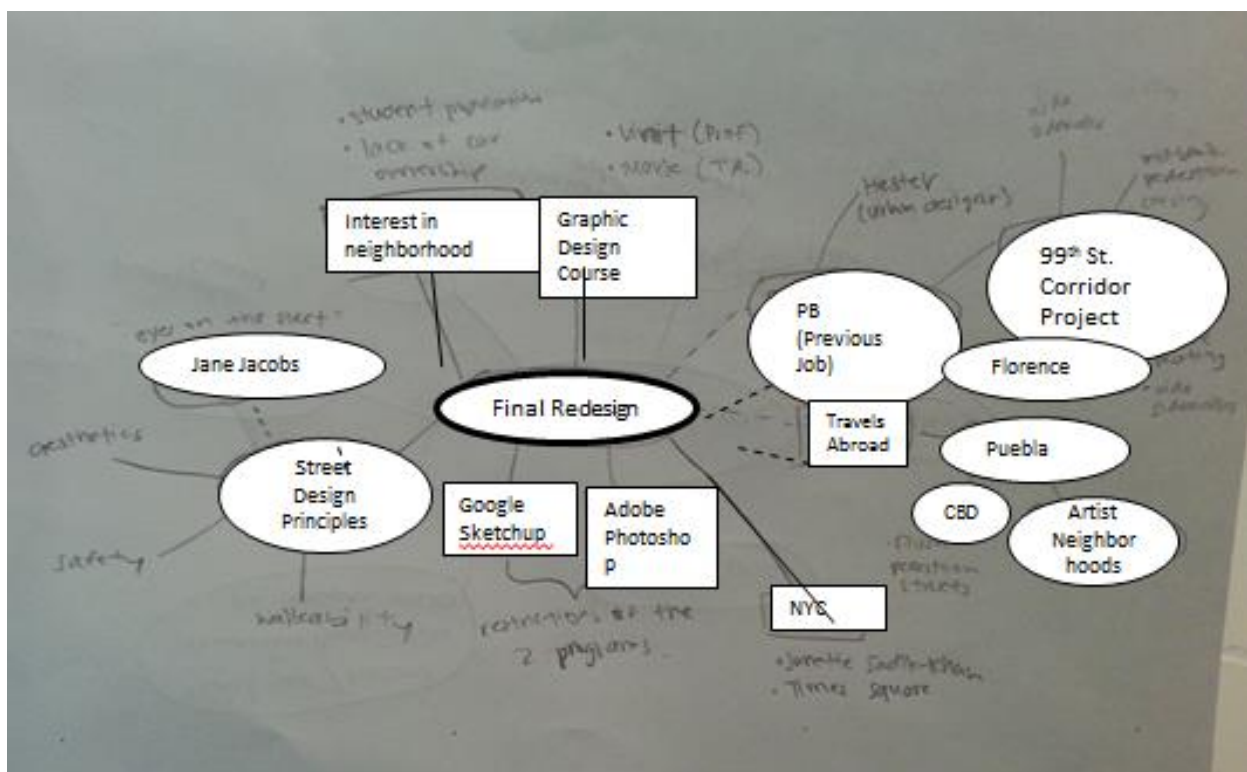
Figure 5.8 Lola's Network Picture

While Jake's network picture only details a few of his influences, Lola's is a bit more comprehensive, taking note of everything from "street design principles" stemming from Jane Jacobs to her travel abroad and the technological tools that she implements.[11] That said there are at least two similarities that we can see from both of these cognitive maps. Despite the difference in number of influences that each participant includes, both Jake and Lola focus their network pictures on inspirational elements. Namely, they see their past experiences, their interests and their peers and mentors playing a heavy role in the work that they produced for the class.

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[11] Given that Lola's handwriting is difficult to discern, I have used textboxes to make her writing more legible.

For example, Jake mentions that his trip to the Caixa forum in Madrid first acquainted him with the concept of a living wall. The feature, housed at the contemporary art museum made a significant impact on Jake. He noted that at the time, "I thought it was so radical to adorn a man-made structure with living plant material. It was a merger of worlds, the natural world and the human world" (reflection, Dec. 26, 2014, p. 3). And because sustainability is an important aspect of his work, **"the living wall was a design strategy that I was eager to bring back to my projects in the United States."** Similarly, Lola indicated that her travels to Florence, Italy, and Puebla, Mexico influenced her design in that they each featured "retail corridors that included important design elements such as outside seating, wide sidewalks, and flush curbs." Similar elements adorn Lola's redesign. Along the same lines, as I've already mentioned, peers, TA's, and instructors also play a role in the rendering process, though Lola gives more prominence to the instructors and Jake more to his peers—perhaps because, as I've shown, each had different exchanges with these different actors.

That is not to say, however that these network pictures are completely representative of each of these participants' experiences. There are a few discrepancies and incongruences. For example, Jake, who talked much about Google Sketchup's steep learning curve, which took him approximately 25 hours to master, makes absolutely no mention of this or any other technology as being an influence on his design. Perhaps this is an oversight or perhaps Jake saw the technology as being merely a vehicle for communicating his final redesign, which was influenced by other actors. More surprisingly, Jake includes his roommate Brian in his Network Picture, whom he never once mentioned during any of our interviews or in his reflections. With this in mind, I

reiterate that network pictures are not intended to be accurate. Rather they offer a way of seeing how participants prioritize and organize perceived interactions in their tasks. Here, we can see that these interactions stem mostly from previous experiences, interests, and peers/mentors.

Something different emerges, however, when we examine the ways that these participants perceive their influences in future work. I asked both Lola and Jake to create an additional network picture in which they tracked which actors they believed would influence their specific projects if they were to be designing in a real-world context. Figures 5.9 and 5.10 show Jake and Lola's real-world network pictures, respectively, next to their in-class network pictures.
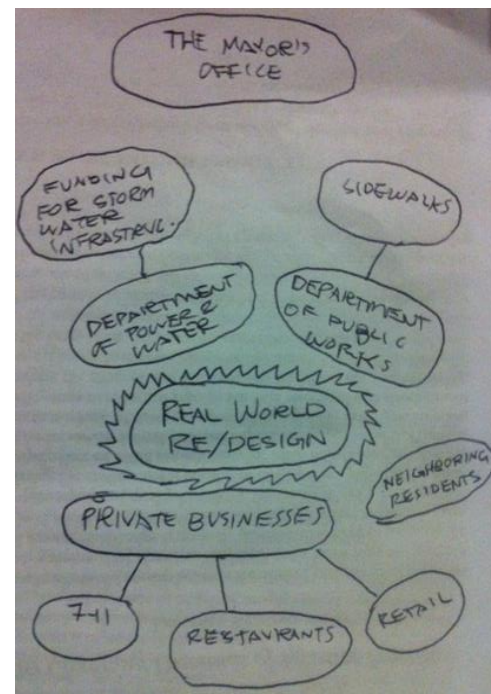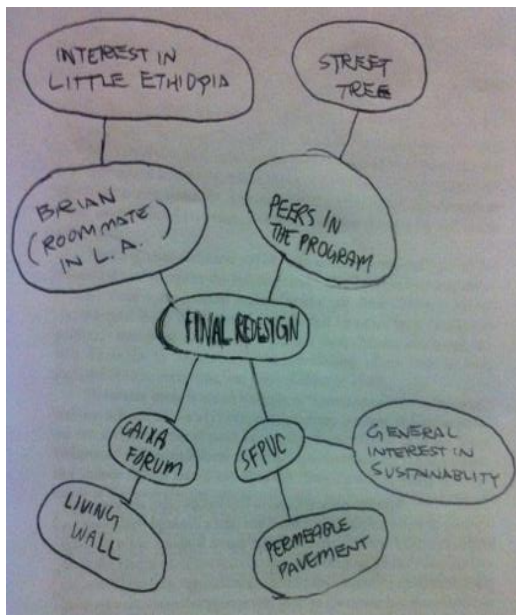
Figure 5.9 Jake's side by side comparison of Network Pictures
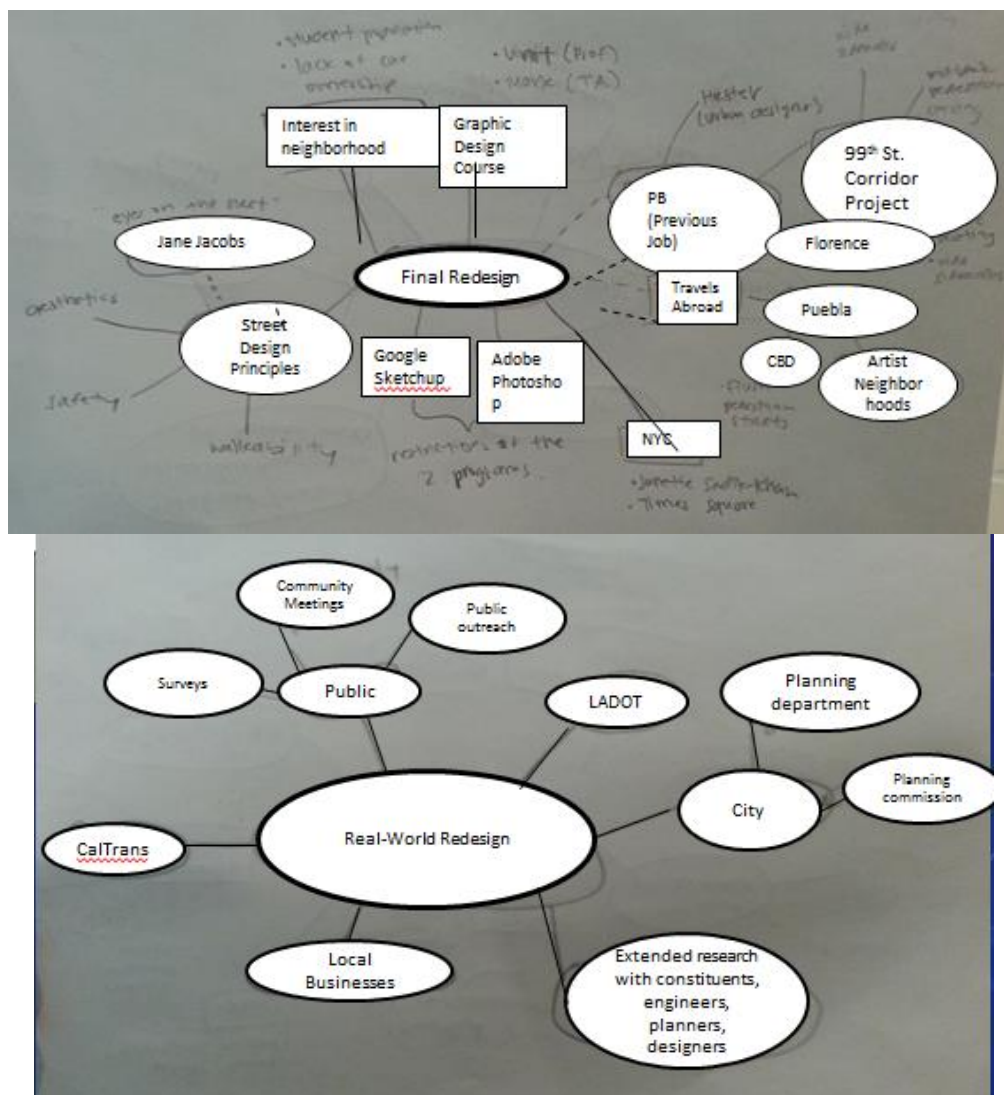
Figure 5.10 Lola's Network pictures

What is immediately obvious at first sight when comparing the different network of actors that these participant perceive themselves working with presently and in the future is that future work on Real-World Redesign projects would potentially involve a lot of negotiation with several stakeholders. For Jake, these include talking with local businesses and the department of public works, and even taking into account the physical constraints of the sidewalks themselves. Similarly, Lola sees her project requiring the input of the public via several avenues including surveys, community meetings, and other

various forms of public outreach. In addition, she would need to conduct extended

research with constituents, engineers, planners, and designers, in order to facilitate her

work.

More interestingly, neither Jake nor Lola includes any of the actors that appear in

their first network picture in their second. That is, ostensibly neither participant sees the

role of inspiration—whether stemming from previous experiences, personal interest, or

peer feedback—as playing any part in the work that they will perform in real-world

situations. Essentially, these paraprofessional students—both of whom have held

positions in policy-making work—see a disconnect between the designing that they are

doing in class and that which they will do once they graduate. One of the main reasons

for this, I argue, is because there is a separation between design and discourse in these

types of design classes. As I will argue below, this dichotomy presents a few challenges

in the way that students approach their work with community stakeholders. Most notably,

if students do not see the connections in the classroom between discourse and design,

they may not be equipped to handle difficult rhetorical situations that call not only for

their skills in design but also their abilities to balance community needs with their expert

knowledge.

5.7   Implications

5.7.1   Bridging Discourse and Design

One implication that I see stemming from this project is that Professional Writing

and Communicating Across the Curriculum work needs to start making connections

between language and visuals clearer for students and for instructors. Otherwise, students

will neglect the rhetorical element of their designs. I will illustrate what I mean through

an example. One spring semester, in a section of my Writing for the Health and Human Sciences course, I had decided to partner with an elder care facility that had difficulty with communications that took place between nursing professionals and lay staff regarding patient care. In groups, students would propose, design, and produce materials that would help ease this communication issue. After listening to our community partner, one group proposed creating an elaborate chart on a whiteboard where personal care attendants, who take care of the everyday needs of the clients while they were in treatment, could document any issues they thought merited the nursing staff's attention. The whiteboards would be placed on the outside of each patient's room so that nurses could quickly read and assess any issues that merited their attention. Asking if they had run this idea by our partner, the group said that they had not, but that this is what they thought would be helpful if they were in this situation. And it also gave them practice in mastering *InDesign*, one of the required technologies that I had asked them to utilize for the course. I could see the issue with this solution but I asked them to reach out to our partner to make sure that this idea would work for them.

Not surprisingly, our partner stated that the charts on whiteboards, while efficient, would not work for the current situation because they would violate a patient's HIPAA rights. Because privileged information would be made public on these whiteboards outside of each patient's room, they could not be used. Luckily, these students had not begun their work yet and could switch to a different idea—one that more closely matched the needs and constraints of the organization. My point here is that it was not until students engaged with the discourse that circulated around our community partner that they were able to meet the challenges posed by a particular problem. It would have been

far easier to use our community partner's communication issue as a case study for students to gain practice in using design tools. Their products would have been well crafted but students would not have gained an understanding of how healthcare systems function or how to produce change via the appropriate mechanisms.

In some ways, I see a corollary here with my participants who have been told that urban planners need to learn how to operate design technologies in order to successfully promote equity in communities. While planners have started to learn to use design technologies, all of the planning student participants in my study enrolled in these design courses were being taught by architects. This makes sense given that planners themselves have only recently begun to return to design (Chapter 3), but because architects are guided more by focusing on their creativity and meeting private client needs (Roswell, 2014, pp. 97-100) rather than attending to communal equity, the focus of these classes seems to be more on learning how to use the technology rather than learning how to include technology into the bureaucratic structures that planners must navigate through. Yet, as long as this work continues to be divorced from analyzing the discourses that circulate around a space, there will continue to be a separation between classroom and real-world work. Rather, what is needed is, much as Alexander and Rhodes (2014) argue regarding multimodal composition in writing instruction, is to contextualize technologies and teach students to develop multiple strategies for adapting them to specific situations. In both of these scenarios—writing and planning—we can see how there has been a move toward the adoption of technologies that will help advance multimodal arguments. However, until we ask that learners (and instructors) of these technologies move beyond

the simple acquisition of design skills, broadly defined, the rendered artifacts will not demonstrate any growth or strategic awareness beyond the context of the classroom.

Therefore, from a Communicating Across the Curriculum (CAC) perspective, I think it behooves us to be more engaged with our colleagues in spatial design, whether that be in landscape architecture, urban design, or architecture in general in order to help collaboratively develop more rhetorically attune assignments that ask these up and coming place-making professionals to integrate what they are learning about design rendering technologies and community outreach.

This could take the form of asking students to take more time getting to know what people in a community think about the space that they are attempting to change, which would bring in more public concerns into their network pictures and more fully capture the messiness that exists in professional contexts. By interviewing neighborhood stakeholder, paraprofessional urban designers can add another, more rhetorically appropriate layer to their designs—one that would be more attuned to the needs of those who will actually use the space. This, however is not to say that interviews are the only means of drawing out such thinking in students. I realize that in a course specifically designed to teach students how to use particular design tools, there may not be enough time to allow for such work (in this case, my student participants were on the quarter system, which abridges the term to 10 weeks).

But surely asking students to redesign a space that is already contentious or which is currently in the process of being reshaped would help to give them the practice they need in managing actual discourses that circulate surrounding a space when they design. Students could read local newspapers and blog sites to see what types of comments have

arisen regarding a space, Or they could attend public meetings in order to listen to the concerns that people in the neighborhood have about a specific project and then engage in the difficult work of finding themes and patterns across constituents in order to make their designs more rhetorically robust. In this way, students in these courses would learn to move beyond "the expected flesh-and-blood readers" and towards gaining a sense of the meaning-making practices of communities (Porter, 1986, p. 46). Combining that knowledge with budding technological know-how could help design students better see the correlation between their classroom work and their future work. Something other than simply learning the technology would help go a very long way in bridging this divide that we see between the design classroom and the design workplace.

We know that planners have developed a reputation for being rather incapable of listening to people's needs in the community. This can stem from a number of issues ranging from disinterest to prioritizing private interests that fund projects over public interests that can't. But one thing is clear: more work can be done to better prepare urban planners (and by extension, urban designers) to manage discourse. For example, in one of our exchanges, Lola, who worked in a planning firm for a year and a half noted that:

> A lot of cities just go around to communities to get their opinions just to be able to say that they did and that doesn't mean that they will necessarily use that information. In my experience, there wasn't anything that was happening really after we did those surveys. The surveys that I mostly worked with were ridership surveys for our bus services. So from what I see whenever there is an open ended question, I would just enter it into an

excel spreadsheet and it just sort of sits there. (personal communication, Nov. 24, 2014 p. 1-2).

One is reminded in this excerpt of Star and Bowker's (2007) residual categories, their term for "that which is left over after a classification is built" (p. 274). When systems are used to collect and classify information, makers of these systems expect to account for all possible eventualities of data. And yet, as we can see, there are frequently blips and aberrations that cannot be neatly placed into these schemas. In this particular case, the planning firms that collect data from residents can neatly categorize utterances in quantitative form but have a much harder time knowing what to do with open-ended answers, relegating them to the abyss of the spreadsheet file. As Star and Bowker (2007) muse, such professionals "do not know how to usefully record messy human data" (p. 274). If we can help planners like those that Lola works with to not be paralyzed by language and to find meaning in these utterances, I think that we could contribute to this field in a meaningful way.

This is, however, a very big issue that won't be easily solved. As Dylan Dryer (2010) has argued, spaces are often designed with individualistic, consumer driven interests that negate or ignore community ties. In his case study of urban planners' surveys in the pseudonymous city of Portstown, Dryer found that survey questions which planners crafted and distributed situated residents in consumerist positions and therefore reported on planning improvements from an isolationist, neoliberal mentality (p. 33). That is, questions asked residents what they liked, what they preferred, and what they desired in a place, without asking them to think more collaboratively about place making. If we were to import this lesson from a policy context into a design context, we would

need to think about asking students to not just ask residents questions and incorporate them into their designs but to change the ways that their questions are asked. In this way, Porter's (1986) Forum Analysis becomes a tool for thinking intertextually and communally. Porter suggests that "Instead of collecting demographic data about age, educational level, and social status, the writer might instead ask questions about the intertext: What are the conventional presuppositions of this community? . . . What are the methodological assumptions? What is considered 'evidence,' 'valid argument,' and 'proof'?" (p. 46). Moving beyond demographic data and individual desires and toward thematic patterns of larger community perspectives could create more robust assignments than those currently put in place, which would better prepare designers to manage discourse.

    5.7.2   Design Work in Professional Writing and Technical Writing

    As I mentioned in Chapter 2, much of the work that highlights design in Professional Writing and Technical Communication has focused on the design of web pages and other static artifacts. This, as I brought up, is understandable given that these artifacts have a very identifiable textual essence. Occasionally, discussions of how images or objects can help to highlight the text have been brought in, but even here, these discussions have privileged the text as paramount over the "decoration" elements that help to make a text more readable. I hold that we need to engage with fields in which design is at the foreground and the text lies behind it—like in urban design—which, admittedly might initially make it a little more difficult to see how we, as writing instructors and researchers, can or should intervene.

Notice, though, that I say that the text is behind the design, and not that it is completely absent. All design, no matter how visual or material it may seem (i.e. a design rendering of a train station, the built train station itself) has language behind it. Policy documents dictate how wide, long, tall an artifact can be; what the setback should be of these designs, and so forth. We can engage in semiotic meaning making of every rendering and every transportation system (see, for example, Kress, 2009, for a discussion of discourse, mode, and materiality as it relates to meaning making) but we must also acknowledge that these renderings and designs don't come about from a vacuum. Rather, there are textual documents that lie behind every one of these artifacts. In essence, they serve as what Geisler (2001) terms "public texts," which act as "hard facts of organizational life through which authors can control action — or initiate consequences over which they have no control" (pp. 301-2). Public texts such as planning policy documents and course syllabi in design courses can constrain which activities are allowed or foreclosed on within a particular context. Obviously, policy documents have wider-reaching audiences and circumstances, but that is not to say that we should treat syllabi and assignment sheets with any less consequential ethos than we would assign to organizational ones. This is particularly the case if we want to professionalize students in WAC and professional writing contexts to identify and respond to artifacts as they would in a professional setting.

Indeed, the reason that the renderings that Jake and Lola produce are devoid of much rhetorical sophistication is precisely because they followed the syllabus (a textual document) instructions which gave them the freedom to compose on a blank canvas and reimagine space how they wanted to see it. In this case, the syllabus itself acted as the

textual document in lieu of a policy that already exists or one that students would construct using community input. That is, even at a Master's level setting where students learn to become professionals in the field, the work that they are being asked to produce through this assignment seems to be pseudotransactional in that it facilitates student communicative products that "meet teacher expectations rather than to perform the 'real' function" of a genre (Spinuzzi, 1996, p. 193). My point here is that writing matters and that there are material implications attached to the words that are produced in professional fields—even those which at first glance don't seem to have very much to do with writing such as Urban Design. As writing experts, we need to draw out those ideologies and policies which inform the writing of all fields, maybe even especially those when the written work is occluded.

5.7.3   Blending in Network Pictures to PW Research

As I've mentioned in the previous chapter, professional writing research has undertaken the important work of tracing out networks in order to gain a better understanding of how organizations, systems, and processes all function. It is certainly paramount that we trace these communicative associations—regardless of whether we use Actor Network Theory, Activity Theory, or Social Network Theory—because such work highlights how communication occurs in these systems and where breakdowns can happen. However, I do think that including network pictures into our analysis can be very helpful.

Firstly, network pictures can help us get our foot in the door into organizations that might be too physically remote for us to begin mapping. In my particular case, I could not fly to visit each of my participants and map out the different human, nonhuman,

and cognitive actors that influence their work. Instead, I had to gain an understanding of the ways that their products were constructed based on their own interpretation of the systems that they work in. Moreover, I have a better sense of the different types of actors that are implicated in a real-world redesign situation based on the cognitive maps that these participants produced.

More importantly, however, Network Pictures can help us build even more robust understandings of actual organizational networks. For example, knowing that a department within an organization functions (or is supposed to function) in a particular way during a task only tells us half the story. Having a better understanding of how the people who work within that organization view the system from their perspectives can provide us with critical information about reasons why systems might fail. Knowing that a decision-maker views a department as being non-essential to the everyday function of a system can tell us a little bit more when mapping how the system actually functions. Moreover, because every participant in a network brings with him or her a unique perspective of their organization, there are numerous possibilities for triangulating organizational maps and seeing where there are conflicting interpretations of the same processes or spaces. In the end, I should note that I see network pictures supplementing not supplanting the work of tracing actual network processes.

5.8   Limitations and Future Work

There are several limitations that ask that we view these results and implications with a critical eye. The first is the limited sample size and the fact that both of my participants are enrolled in the same institution and in the same urban design course. This cautions us against making generalizations that are too broad when it comes to the data gathered.

While I will say that I found similar patterns across all of my participants in terms of syllabus expectations and stakeholders found in network pictures, even if all 4 participants were to have finished the study, they would still represented a small sample from across 3 different institutions of the 100 plus that offer Master's degrees in urban planning.

That said, there are enough programs with urban design courses that have course descriptions available to inform us that these particular circumstances are not necessarily unique across the country. That is, having a single course on design taught by architects to students in graduate planning programs and ask students to focus on mastering Sketchup as a primary goal seems to be the norm rather than the exception at most of these institutions when one checks the information listed online pertaining to their course requirements. It would be interesting, now that we have a sense of the work that takes place in these courses, to approach instructors listed on these course catalogs and ask them about the different goals that they have for students when they compose. At the same time, we should keep in mind that most if not all of these instructors will come from an architecture background and may not necessarily represent the views of epistemologically-accepted pedagogical practices in urban planning.

Another limitation has to do with the constraints on data collection. While I do note that network pictures can give us a method of tracing networks from a distance in that perceptions of actors can still be a useful data point, it cannot necessarily stand in for the work of being present to capture different actors in the moment. That is why I put forth that network pictures can add to, not replace network research in professional writing. As useful as it was having participants reflect on their process during this study, I must admit

to experiencing some frustration over not being able to see the work that was being produced or to ask questions in situ.

For example, I stressed to Lola and Jake to keep copies of their drafts and to save screenshots of their renderings right before they deleted any design decision in hopes that I would be able to gain insight into their process. Why was a decision abandoned? What influences/affordances/constraints played a role in changing that design feature? These were some of the questions I hoped to learn along the way as my study progressed. But few of my participants remembered to do this, and focused instead on completing their assignment. Jake at one point noted that his design process involved him sketching what he already wanted to communicate:

> I didn't . . . come up with these ideas through sketching. I came up with ideas and then sketched. Which is different than writing I think but I'm also writing a paper at the same time that I'm doing this project. And my ideas are much, much more formulated. I mean, you make an outline when you write, but you kinda don't know everything you're going to get along the way. You start writing and then you're like "oh, I didn't realize this point leads to this point and maybe it might reorganize this. And now this raises a new question." You know, that kind of interrogative process happens a little more in the process of writing. (personal communication, Dec. 9, 2014, p.6).

In essence, Jake sees very little corollary between the writing process and the design process in that writing is ephemeral in some ways. Ideas come and go throughout the

composing process in which ideas are interrogated and expanded. In design, however, what one says has already been conceived long before the sketch is rendered.

Yet, we know from Lola's instance with her TA who told her to abandon the idea of removing awnings that this is not necessarily always the case. There are often design ideas that get implemented in the moment—though admittedly some more drastic than others—and are abandoned or changed. In fact, it is telling that Lola did not provide an image that showcased her original idea of removing awnings from storefronts on Broxton Avenue even though she had reported to have started on this path before changing directions. When I asked her why she had not included the work she had produced but then abandoned, she stated that she simply had undone her progress and moved on because it hadn't been good enough for the class.

These moments become lost without a presence in the design laboratory to view them—particularly because these moments carry very little weight for research participants who view them as only communicating their mistakes and flawed thinking. And when that is the case, it becomes easier to dispose of the artifacts that stem from these moments. I am reminded here of Geisler's (2001) discussion of private texts: "the drafts, the notes, the email correspondences, the doodles" which "feed into or mediate the production of the public texts, but are often lost to participants' consciousness" (p. 300). Being present can help us save some of these private texts from falling into the abyss of nothingness. Or as Geisler notes, public texts "appear to be quite common if you are on the spot and ready to catch them before they hit the trash can" (301). In short, participants felt the need to provide me with public texts because those were the ones that they felt would matter. The drafts were not-yet-public or un-public and only through a careful

chiseling away at the faults would they be made acceptable to transition from one domain to another (from private to public).

Lastly, the fact that the study focusses on graduate students and not on professionals in the field does pose some problems in being able to extrapolate and make claims about designers at large. I do not necessarily bring this up solely as a limitation, however, given that so many of the studies that have been published in technical communication and professional writing focusing on spatial design have ben localized within classroom settings. As I've mentioned, I hope that this study contributes to the corpus of work that is still developing in this particular niche of professional writing. That said, I do think that there are opportunities to move beyond the classroom in future work and try to gain a better understanding of what the design process looks like for urban design professionals working in real-world case studies involving redevelopment and planning. The hope would be to see how their network pictures might differ from students' and to gain a better understanding of how stakeholders—including community and private interests—shape the designs that they create.

<div align="center">5.9   Conclusion</div>

Clearly, there is much work that can be done to move the current conversations pertaining to spatial design in public rhetorics and professional writing forward. One of my questions in this study asked how these design students conceptualized a public. Based on the very few texts that are required in these courses that deal with usability, it appears that students in design courses don't necessarily need to, and yet they are consciously aware that there is a public that will play a role in negotiating what spaces look like. Obviously, students in planning programs will and do read works by Jane

Jacobs and Kevin Lynch, both of whom lay out ways to help capture the essence of the human experience of space. Indeed, Lola includes Jane Jacobs' work as one of the primary influences of her project. But the fact that such discussions are not at the center of the class or brought in more explicitly helps to further split apart design from community and community discourse.

In the past, studies in professional writing centered on spatial design have discussed the importance of classroom feedback and interactions among students and between students and instructors once a design is rendered. And from a public rhetorics perspective, the impact of these designs in real-world contexts on members of the community have been analyzed and critiqued. In both of these contexts, spatial design has been studied but only after a design has been rendered. If we are interested in learning more about either of these dynamics that deal with communicative exchanges and materiality in classroom and community settings, it may behoove us to add to the extant body of work by asking more questions about how these students and experts actually design. That is, we should focus on the actors that help to contribute to these designs in order to get a better sense of how to intervene.

I'm not necessarily making a new argument that rhetoricians and professional writers and writing researchers get involved in spatial design. That argument has already been made over the last decade or so through several research studies. Rather, I hope that we can rearticulate the relationship that we have to spatial design and how we choose to enter into this conversation. In this chapter, I have illuminated openings for researchers to engage in this work. However, there are also pedagogical opportunities through which we can also exercise our expertise in writing, rhetoric, language, and usability.

While the majority of this project centers on studying the influences that play a role in designers' renderings of urban spaces, I see an opportunity to engage with issues of urban placemaking more broadly to give our students a new lens through which to view usability. Specifically, in my final chapter, using the videogame *SimCity 4* as a backdrop, I provide a model of how students can learn more about the ways that they engage with problem solving and how they may learn to think about the implications that their design decisions will have on users and communities further down the line.

It is true that many engineering students enroll in technical writing, and while those who are focusing primarily on civil engineering may see the most immediate connection to the use of *SimCity* in the classroom, I put forth the following pedagogical proposal to speak more generally to all students hoping to tackle wicked problems across different disciplines—from engineering, to computer science, and health professions such as pharmacy and nursing. In all of these settings, problems with using a system, an object, a treatment, and so forth develop. Additionally, in all of these scenarios, implementing solutions can lead to unexpected new problems. It is will be up to students in our technical writing courses to forecast and work with users and communities to develop solutions that are sustainable. As I will show, focusing on the creation of urban spaces can provide a way of talking about these issues.

CHAPTER 6.   TEACHING WICKED DESIGN PROBLEMS IN TECHNICAL
COMMUNICATION WITH SIMCITY

6.1   Introduction

Throughout this project, I have been detailing the ways in which rhetoric,

professional writing, technical communication and planning and design all intermingle.

While it is true that technical communication and public rhetoric have begun to examine

spatial design (Chapters 2 and 4), there remain a number of historical and discipline-

specific issues associated with urban design (Chapter 3 and 5) that would need to be

addressed before and during any partnerships between rhetoric, professional writing, and

urban design. But that we can bring up issues of discourse, community, and usability in

terms of spatial design in the courses that we teach—many of which are required for

students in undergraduate space-making fields such as civil engineering.

Indeed, as Carolyn Miller (1979) long ago suggested, it should not be the role of

the technical writing classroom to simply teach students how to communicate technical

information clearly, as all technical data is inherently tied to particular ideologies that

need to be examined and critiqued. In that sense, in this final chapter I offer an exercise

that uses the language of spatial design—namely "wicked problems"—in order to have

students consider the fallibility of design. I argue that by using *SimCity 4*, we can teach

students to interrogate their understanding of design as a solution to community problems

and to begin to think of ways of engaging a populace as space-making professionals

6.2   Wicked Problems in Design

As Rhetoric and Composition and its subfields turn their attention to design, conversations about wicked problems have started to emerge within the scholarship. The term, "wicked problems" is attributed to Horst Rittel and Melvin Webber—city design theorists. Essentially "wicked problems" are problems that arise—often unforeseeably—from design choices. According to Rittel and Webber, the fact that cityspace must consistently be reimagined and reused indicates that there can never truly be an endpoint or a starting point for city designs. They refer to problems of urban planning policy and design as "wicked" problems, which unlike "tame" ones cannot necessarily be solved with one equation or solution. Rather, the solutions to wicked problems are iterative and highly contextual in that what works (in a broad sense) for a particular time and place may not be feasible or desirable for following generations (162).

Figure 6.1 The Alaskan Highway Viaduct has acted as a major thoroughfare moving Seattlites from one end of the city to the other for fifty years. Although it will be torn down and replaced with an underground passageway, its path will mimic the viaduct in order to link to the city's current infrastructure.

Moreover, one cannot directly test solutions in planning to determine feasibility and desirability. Rittel and Webber illustrate this by stating that "One cannot build a freeway to see how it works, and then easily correct it after unsatisfactory performance. Large public works are irreversible and the consequences they generate have long half-lives" (163). Given the ways that planning leaves its mark on a populace, it makes sense that a local citizenry should have a say in the transformation and continuous repurposing of their spaces. All this is to stress that urban design must be an iterative practice of thinking and rethinking because its material consequences can have longstanding impacts on the environment, communities, and economies.

For example, the Alaskan Way Viaduct in Seattle has served as a connection between the northern and southern points of the city's downtown area since its completion in 1959 (see Figure 6.1). Prior to that, cars and trucks competed with trains for a fast and direct route in and out of the city. The viaduct served as an expedient

alternative to this problem as it elevated traffic above and west of the streets and rail lines. However, with time, wear began to take its toll on the double decker highway, and with the damage suffered from the 5.1 magnitude Nisqually earthquake in 2001, plans needed to be reassessed for the future of the viaduct (Viaduct History). In 2009, citing environmental and economic reasons, planners and engineers, along with city, state and county leaders recommended replacing the waterfront section of the viaduct with a tunnel. Interestingly, this option was chosen, in part, because it would allow the current viaduct to remain open as the tunneling machine (referred to as "Bertha") digs the new route underground (Washington State Department of Transportation).

Here, we can see how old solutions to old problems give way to new problems. The viaduct in Seattle, once heralded as the answer to congested streets, has become a safety hazard which the city must correct. The highway must be reimagined from one that is elevated to one that is beneath ground level, giving way to a new use of space—the Waterfront Program seeks to take advantage of this new area above ground and create " a pedestrian promenade, two-way cycle track, and new Alaskan Way that accommodates all modes of travel [as well as] two rebuilt public piers, new parks and paths, and new pedestrian connections between the city and waterfront" along the old Alaskan Way viaduct path (waterfrontseattle.org; see Figure 6.2).[12] Yet, because of the irreversible placement of the highway, the new tunnel can only go in one particular path to link one end of downtown to the other.

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[12] Nor surprisingly, budgetary issues that have stemmed from Bertha's getting stuck underground have forced the plans for the promenade to be scaled back significantly.

1. Pedestrian Promenade
2. Colman Dock Gallery
3. Union Street Pier
4. Aquarium Plaza
5. Pier 62/63
6. Overlook Walk
7. New Alaskan Way
8. Belltown Bluff
9. Bell Street Park Extension
10. Railroad Way
11. Main and Washington streets
12. Columbia Street
13. Seneca Street
14. Union Street
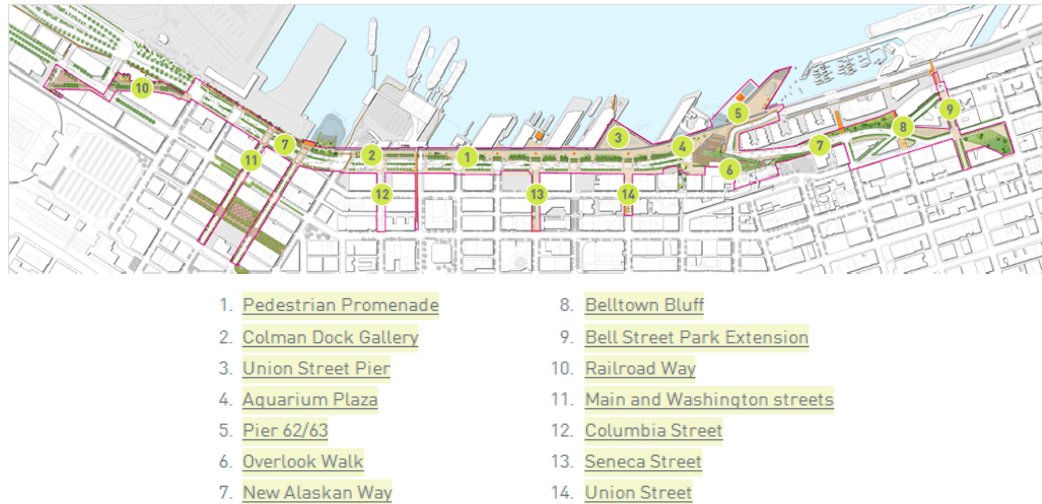
Figure 6.2 A reiteration of current highway space in downtown Seattle.

These discussions of design in the technical communication classroom are particularly important because they open up the opportunity to discuss wicked problems' impacts with our students, many of whom are enrolled in various engineering and technology programs that ask them to make, create, and design mechanical systems, infrastructural networks, and information delivery platforms. In each of these cases, students will need to be able to understand the impact that their constructions will have on users, but more importantly, students will need to be able to see how new designs may cause a change in use patterns and how these changes in use patterns will lead to new design needs, and so on. In other words, student will need to learn not only how to listen to stakeholders (Salvo 2005), but also to listen to the systems in place and their histories as well (Salvo, Pflugfelder, & Prenosil 2010).

6.3   Writing and Wicked Design Problems

Some researchers in technical communication have already highlighted how place-based research helps us listen to the various systems and stakeholders in place and

to uncover wicked problems that exist in the design of communication infrastructures. For example, in their action research project, Blythe, Grabill, and Riley (2008) demonstrate how the technical communication researcher can become involved in environmental discourse that stems from wicked design problems. Specifically, Blythe et al. observed a situation in the pseudonymous town of Harbor where the Corps of engineers had been hoping to dredge the local canal to allow for faster navigation by cargo ships. As in many cities in the United States, "The industrial uses of the harbor and canal [had] left the waters heavily polluted" (p. 276), which caused concern over the dredging plan because such a process would dislodge the toxins found in the decades-worth of sediment. Because Blythe et al. approached their action research as research that is "contextual, local, and requires intervention, not simply description" and for the benefit of the community of Harbor itself, their work consisted of observing how the people in the community of Harbor learned about relevant information pertaining to the project. Moreover, Blythe et al., after their prolonged engagement with community members and with experts working on the project, provided Technical Outreach Services for Communities (TOSC) organization with more effective communication strategies that would respect the knowledges that community members bring to these meetings.

That said, as important as knowing how to respond to wicked problems, is understanding that wicked problems permeate in every aspect of design—even the design of students' products in class. To that end, some researchers in Composition have illustrated the value in drawing a relationship between writing and design thinking. Richard Marback (2009) suggests that we approach problems as a type of invention heuristic rather than as discovery. In this way, we can all change our relationships to the

artifacts of design that we encounter, those we change, and those which we ask our students to engage with—sometimes to critique and remold. "The wickedness of designing," Marback writes, "is that it is more than merely the making of an artifact; it is an embrace of ambiguities in our responses to each other with and through our artifacts." Thus, designing involves "responding to the ambiguities by handling artifacts."

Design Thinking	Writing Process
Understand	Research
Observe	?
Define	Analyze audience
Ideate	Brainstorm
Prototype	Write rough draft
Test	Share and revise

Figure 6.3 The comparisons made by Purdy between Design Thinking and Writing at every level.

James Purdy (2014) furthers Marback's call for a "fuller turn to design in composition studies" by aligning writing process steps with those commonly found in design thinking. In this typology, the usual "steps" in the writing process are paired with those in the design process. For example, the research phase of writing can be seen as being diametrically linked to the understand phase of design thinking in that both require the writer/designer to gather "information needed to ground and contextualize what is produced" (628). Purdy's complete alignment of steps is reproduced in Figure 6.3.

Reformulating how we conceive of the writing process and thinking of it in terms of designing, according to Purdy "can prepare writers to consider multiple responses to composing tasks" (629). For example, the Ideate stage, he attests, "emphasizes the importance of considering many different response to a design task, of not getting locked into one response too early to the exclusion of other options." The main value here, Purdy

suggests, is that students can come to fully explore the contradictory possibilities for writing at every point in the process of a text. In that way, one suspects that they can come closer to embracing these possibilities—along with the ambiguities, as Marback would assert—that come with creating artifacts to communicate with others in similar and disparate communities.

Perhaps because Marback and Purdy respectively discuss wicked problems from a composition perspective, their discussions call for drawing parallels between writing and the wickedness of design. From a technical communication approach, however, Blythe et al. invoke wicked design problems as preexisting conditions in the world that call for a response through collaborative efforts. Blythe et al. observe how the wickedness lies in the environmental designs that have taken shape over the last decades and have had a material impact on the town of Harbor. However, once a solution is designed to open communication between experts and members of the community, the story of Harbor seems to end for the researchers. Rittel and Webber would claim that whatever solution their action research produced on the material conditions of the town, those too would lead to new (for now) unforeseen wicked problems.

In either case, despite the differences, each of these approaches posits that sustained engagement can help students to gain a better grasp of wicked design problems. Marback (2009), for example, explains how he assigns a "Taking Advice" project in which students "create a manipulable media artifact from which other students can take advice about a topic the student designer feels expert in" (p. W417). The purpose here, Marback mentions, is less on the giving of the advice and more on the construction of an artifact that is *able* to give advice, which often means that students must manipulate "the

features of the media artifact to make sure they work, that they do function to actually give advice" (p. W417). Of course, when students create these rhetorical products, attention must be paid to user interaction and what types of advice users would actually find helpful. This is not all too dissimilar from how we ask students to think of their work for community partners in our service learning courses. That is, the designed interventions should work on a level that takes the stakeholders' responses into account.

And, as is evident from Blythe et al.'s (2008) work, engaging with community members and organizations in real-world situations can help illuminate some of communication practices that circulate within the context of wicked problems and can open a space for technical communicators and technical communication researchers to intervene by providing our own expertise. Similarly, service learning projects require students to explore multi-faceted and ambiguous problems that call for inventive solutions based on their personal skillsets and the characteristics of the local context (Wojahn, Dyke, Riley, Hensel, & Brown, 2001). As with Blythe et al, (2008) such embeddedness within a problem is a necessity for the technical writing student to design solutions that meet the needs of a client (Wojahn 2001, p. 137). Moreover, many in the field have lauded service learning projects for their positive impact on pedagogy. Sapp and Crabtree (2002), for instance, claim that "Service learning projects provide technical communication students with education in engaged citizenship…[and help] make connections between theory and practice, the academy and the community, and inquiry and social action" (p. 412).

However, service learning as the sole solution to expose students to wicked design problems (whether seeing them in action or helping them to accept and adapt to

them in their own designs) can be problematic in its own right. As J. Blake Scott (2004) puts forth, many of service learning's promises such as enacting civic responsibility and engagement with local issues and communities go unrealized in technical communication courses that are undergirded by "hyperpragmatism," which stresses professional success over critical thinking. Additionally, the sizeable investment required by these partnerships may leave students in unreflective positions simply trying to accomplish the work by a necessary deadline. Lastly, service learning projects, if one is not careful, have the unintended possibility of "instrumentalizing" people—as Blythe et al. (2008) would note, of using others for our own ends (p. 274). In this particular instance people in organizations may be used to provide a learning experience to students or, conversely, students may be used to provide a solution to an organization.

I am not necessarily making an argument against service learning; indeed, I have frequently partnered with organizations to help students understand the type of writing and communication that transpires within a particular field or workplace. Rather, I am simply noting how service learning requires much attention to these particular issues in an attempt to posit if there might be an alternative or an intermediate space for students to learn about wicked problems when time constraints do not allow for such prolonged engagement with others. Certainly, a solution in service learning pedagogy that may offer a solution to some of these issues might be to write "about" communities rather than for or with. However, as Nedra Reynolds asserts, such a stance produces a distance between students and communities in that students "form no attachments and cannot fully understand the 'community' in ways that would develop with long-term contacts" (135).

Moreover, such a solution does not necessarily lead students to exploring the issue of wicked problems in any experiential manner.

In that sense then, I have started to wonder to what degree virtual humans and simulated scenarios may help to stand in for stakeholders in situations where there may not be enough time to partner with community organizations and entities, or how virtual humans and environments may occupy a middle space between simulated classroom instruction and real-world immersion for the sake of teaching about wicked design problems.

<div align="center">6.4   V(irtual) Humans</div>

Many have written on virtual humans stemming back to at least 1966 with the creation of Joseph Weizenbaum's ELIZA—an interactive computer program that, according to Weizenbaum, made "natural language" with a computer possible. Users input a statement into the program's interface and then the text is "read and inspected for the presence of a *keyword*. If such a word is found, the sentence is transformed according to a rule associated with the keyword…" (42). Hence, a statement such as "Perhaps I could learn to get along with my mother" is transformed to read "Tell me more about your family." Although such scenarios may seem too contrived to elicit buy-in from users, technology theorists such as Sherry Turkle (2011) point out that we are frequently ready to accept the faux humanity of machines. According to Weizenbaum, despite instructing his students that ELIZA was not human and merely adapted algorithmic and predictive formulae for "responding" to users, many of them still found themselves writing to the program as though she were human. As Turkle, who worked closely with the program, writes:

> Faced with a program that makes the smallest gesture suggesting it can empathize, people want to say something true. I have watched hundreds of people type a first sentence into the primitive ELIZA program. Most commonly they begin with "How are you today?" or "Hello." But four or five interchanges later, many are on to "My girlfriend left me," "I am worried that I might fail organic chemistry," or "My sister died." (23)

We can develop strong attachment to artificiality, particularly when it seems to mirror human traits that we come to expect more from individuals than screens or devices.

In response, many companies have come to understand the importance of simulating humans. As Spencer (2003) reports, many companies have experimented with using virtual humans to stand in for real-human customer service agents. In the early 2000s, many companies had rolled out virtual humans as a cost-savings measure: Yahoo had JENNI, United Airlines created TOM, Coke.com's v-rep was named HANK, and Sprint PCS developed CLAIRE, to name only a few of the different v-humans. Over time, the use of v-humans has become less of a novelty and more of a ubiquitous reality. For example, when I dial the customer service line to request help with my cable service or to check on the status of an order from my bookstore, I am greeted with a friendly voice asking me to explain my issue and how she can be of help. There are no names attached to these voices, most likely because they have become too commonplace to be met with any type of fanfare.

However, perhaps no virtual humans have been as famous in the previous decades as the sims who/that inhabit the videogame of the same name. In *The Sims*, as Flanagan

sums up, the player is responsible for micromanaging the lives of simulated humans on nearly every level:

> players maintain a consumer-driven suburban household focusing on everyday activities such as sleeping and eating. … Players manage a virtual budget to purchase appliances, furniture, lamps, and books. Characters seem happier when they have expensive commodities and larger homes; once players learn this, they direct characters to look for an income. When Sims are unhappy the virtual world quite literally descends into chaos: characters stop using the lavatory, filth accumulates and joy decreases. (Flanagan 2007, p. 150)

There are, of course, other aspects to the game, and with the release of the 4th installment (and numerous expansion packs that center on university life, owning pets, and opening a small business), there are frequently many goals and unforeseen consequences to keep sims occupied.

What I see as being more poignant to a discussion of wicked problems comes from *SimCity*, the game that served as inspiration for *The Sims*, predating it by a decade. Unlike *The Sims, SimCity* is a "zoom" away from the individual tasks of the everyday to a more complex view of the networks in place that impact multiple Sims on a more global level. In *SimCity*, a player acts as a mayor who wields the power to zone areas for development (Industrial, Commercial, Residential), build community and city-wide services such as police stations, hospitals, libraries, and so forth, and coordinate electric, water, and garbage utilities to ensure that residents can live within the city—all while keeping a close eye on the budget.

6.5   *SimCity*'s Pedagogical Affordances

Interestingly, the SimCity franchise has long been linked with pedagogical

interventions (Thomas 2007, p. 210). Most recently, SimCity Edu has launched

specifically as a "resource for classroom teachers who have a strong interest in utilizing

digital platforms as a learning tool to drive student interest in STEM (Science,

Technology, Engineering and Mathematics) subjects" (EA and Glasslab Collaborate 2013,

para. 2). With this platform, instructors can develop lesson plans and share resources that

teach students about important STEM concepts all through the backdrop of urban

planning, environmental management, and socio-economic development. While this

newer version of SimCity could be useful, my interest in this chapter focuses not on what

Richard Mayer (2014) would call "games for learning" or games that are specifically

"intended to promote learning" (ix), but how a game like SimCity could be (and has

previously been) *adapted* to promote learning in a targeted manner.

Douglass Coleman (2002) for example, has shown how the use of *Sim Copter*—a

simulation game in which players pilot a helicopter around the city in order to complete

various tasks (putting out nearby fires, tracking criminals' moves through the city streets

and so forth)—can aid ESL learners to consider audience when they write. By asking

students to take on the role of a pilot who must write down instructions around town for a

visitor, Mr. Roberts, and then the role of Mr. Roberts himself as he tries to interpret other

students' instructions for maneuvering through the city, Coleman reported that students

gained a better understanding of audience considerations from numerous perspectives

(228-229). In another example, Monjelat, Méndez-Zaballos, and Lacasa (2012) used the

Nintendo Wii version of the game to study the learning and problem-solving habits of secondary school aged children.

Not surprisingly, most accounts of using *SimCity* have come from within an urban planning context. For example, Gaber (2007) has used *SimCity* simulations "as a way of allowing students to test existing planning theories as well as providing an environment to let them try their own planning theories in class" (p. 117). For "roughly two-thirds of a semester," students test what building cities according to ideological underpinnings does to the simulated environment. For example, "how does a Garden City development handle traffic congestion? Or, what are some of the infrastructural ramifications (e.g. water and energy) associated with a low-density Broadacre City" (p. 117). In Gaber's second scenario, students are allowed to use the game as a sandbox to develop their own urban design theories and test them using these same types of questions, hence building their own theory of planning and design.

Despite Gaber's long (and mostly positive) use of the game in his classes, most planning researchers have been highly critical of the game. Adams (1998) for example, (rightfully) decries the game for its "gross simplifications of urban processes (most obvious of which is that the major does not have to negotiate with a city council)" to accomplish any tasks (p. 50). Kenneth Kolson (1996) similarly criticized the franchise series for bestowing such omnipotence on the mayor (p. 43), but also asserted his disapproval of the game's tendency to sweep racial differences under the rug. Additionally, Kolson took note of the designers' bias for thinking of the city as an aesthetic collection of buildings and places rather than as the interaction between people and communities, which seems to minimize the interpersonal and person-centered work

that planners attempt to focus on in community-building (p. 44-45; see also Gaber 2007, p. 116). For example, blight, which Kolson characterizes as growing and spreading "like crabgrass" is a problem to be eliminated and not engaged with. The solution to blight and decay in the game has solutions which don't necessarily work in real life and which may lead to other wicked problems down the line.

Such biases, Lauwaert (2007) contends, stem from a close alignment with American desires for and assumptions about the built environment, namely that space is plentiful and can/should be built up. In other words, there is an ethic of consumption, not unlike in *The Sims*, meaning that in order to progress through the game one needs to continually add on to the surrounding environment. As she posits, "By building police stations, enlarging your city, and adding water and green areas, the property value will rise and criminal rates will drop. . . .you are never done building in SIMCITY, the game never ends, and your city can always grow and change some more" (199). Additionally, the default gridded approach to platting streets is congruent with looking at cities as machines, meant for the efficient use and selling of land and less on the social fabric that makes a city. Indeed, this focus on expediency is embedded within the gameplay itself, as Lauwaert points out that walkthroughs for SimCity 2000 and 3000 recommend implementing policies that align closely with middle class realpolitik policy strategies that centered on "low taxes, high land prices and a forceful police corps" at the expense of healthcare and other social services for the public good. (198-199).

As is evident, planners have both used SimCity in their classrooms to familiarize students with city-building and have critiqued the game for its tendency to privilege certain values over others. A thread that is apparent in all of these critiques is its

unrealistic portrayal of citizens. Even Gaber who has incorporated the game into his planning course, is aware that "SimCity shows people only generically moving around the city (driving, waling, and occasionally protesting with signs), but not interacting with each other. What little the simulation does to get people on the simulated streets involved with students [who play the game] is through static messages in the pop-up menu…" (p. 116). For these particular reasons, Divesch (2008) writes that planners shouldn't use *SimCity* as a simulation. That sims are really algorithms and don't behave as people would in real life necessarily eliminates the "real" work of planners. Divesch argues that the behaviors that the Sims in *SimCity* do exhibit often do not correspond to real behaviors (p. 214-215) and instead, as mayor, what one can do is predict how to elicit these behaviors. Such predictive inputs and outputs limit the inventiveness of the game and belie its simulated nature; for example attractors will pull sims in to the city: "constructing more single-family houses will, for instance, attract more middle-class Sims" (p. 214) with little—if any—variations. The same holds true for repulsors (i.e., traffic congestion), which move Sims away from the city. What is missing are the realistic ways in which people make sense of complex systems on a ground level. As Divesch indicates, numerous solutions to systemic problems are lacking on the part of the Sims who live in *SimCity*: "Perhaps they can take a shorter route to work if there is congestion, but they would never buy a run-down house in an up-and-coming area, decorate it and sell at a profit" (p. 217).

What is common in all of these critiques however is a longing for a planning simulator, which is not surprising given that these articles are published mostly in planning or geography journals. Perhaps these desires for *SimCity* to be a real planning

simulation can best be illustrated by one of Adams' (1998) students who wrote in their reflection "While [*SimCity 2000*] strove to show the reality of building a city and the urban processes, it also inadvertently revealed the true nature of itself; it was *simply* a computer game" (p. 52 emphasis added). However, what might be most useful is to think more broadly about SimCity not as a simulator, but as a network—one which, as Sherry Turkle (1995) reminds us, "is about making choices and getting feedback" (69). Certainly Divesch (2008) laid out a useful explanation of the ways that the game's systems operate. However, these points were brief and only scratch the surface of the intertwined nature of the game's parameters. Ruiz-Tagle's more thorough analysis of the different systems goes further in depth and actually begins to touch on certain wicked problems. As he notes, in *SimCity*, "every agent has internal properties and a behavioral logic. The internal properties generate effects on the environment. . . .In this way, the environment generates new determinants that collide with the behavioral logic of the agent . . ." (p. 578). To illustrate Ruiz-Tagle uses the example of high density housing, which serves as an Agent. This Agent's Internal Properties consist of 750 housing units. The Effects that these Properties have (chiefly 750 automobiles on the streets) on the Environment (high traffic) cause high congestion and commute time (Environmental Determinants) to impact the city (p. 577). We can see how, as Ruiz-Tagle explains, "all these elements interact to form a system, generating different developments with different decisions of design and urban planning and with different ways of managing them" (578)—a complexity which is brushed aside in other discussions of the game by researchers who mainly wish for the game to mimic the reality of planning more closely.

Ruiz-Tagle's students learn about the variety of ways that these systems can be manipulated (and sometimes fail to be manipulated) in the pursuit of solutions. For example, one student's aim was to "test the development sustenance of an urban outlying area by handling the transportation systems" (581). After his initial attempt to add a subway system to promote navigation to the industrial sector on the periphery of the city, there were few sims who opted for this transit option. It was only after the subway stations were paired with a commercial nucleus that the use of the subway rose. Again, this may not necessarily mirror how planning works in reality, but it speaks to the different systems that are connected in the game (zoning and transit in this particular case).

That said, very little information is learned from this experiment once the students' tasks are accomplished. For example, once the aim of building an outlying area by using transit has been obtained, Ruiz-Tagle writes that the new development created "an industrial development pole away from the city, maintaining the land value of the most demanded areas and satisfy[ied] the needs for work and consumer goods of the peripheral zone" (581). What would be more interesting, I think, is to get a sense of what these interventions cost—not monetarily per se, but rather how the fabric of the built environment had to be restructured in order to accommodate these interventions and how this, in turn impacted the systems and sims that resided in those areas. Moreover, in reading over Ruiz-Tagle's write up, I am curious about what new problems arose after these interventions were put in place. This end is, after all, only the beginning of a new need.

In other words, I'm curious about what would happen if we slowed the game down and asked students to interrogate their choices, not just for the sake of gameplay but to learn more about the consequences of these decisions on (eco)systems. I agree with Divesch when he asserts that "it generally takes years before one is able to assess the impact of a [design] decision, the developers of the game have dramatized the behaviour of the Sims, and deliberately exaggerated the effects of activities, in order to provide feedback to the mayor" (p. 214). This sentiment aligns closely with how some of Adams' students, asked to reflect back on their use of the game in his one-week activity, were critical of the ease with which a mayor can make new decisions happen. In particular, two of them, respectively, highlight how "If I make a mistake in my city, I can simply bulldoze it, or reload the city from my last save point" and "The game almost trivialized the major decisions that people dealt with, at each stroke of the mouse. A major power plant was built in half a second" (p. 52). As many have already alluded to, these all-powerful decisions on the part of the mayor disregard the reality of city-building. But moving the gameplay away from a planning-based activity and more towards a technical writing exercise could help reappropriate the game's interconnected systems, much like Ruiz-Tagle did, but with more sustained engagement that would illuminate wicked problems of design.

Technical Writing students would, of course, understand the implications of their design choices in an immediate context, which would provide a learning experience. According to Kurt Squire, such engagement with interfaces "is a functional, or pragmatic, way of knowing because we make meaning through interacting directly with the world and observing our actions' consequences" (143). And over time, playing SimCity with a

tally of the changes (the bulldozed houses, the rezoned blocks, the widened streets) and the impacts that each would have on the real world may alert students to the necessity of paying attention to the human element of design choices.

6.6   The Simulated Terrain: A Virtual Case Study of Lakeville

My goal in using SimCity here now is to focus on teaching technical communication students how design decisions have long half-lifes. In what follows I present an account of a SimCity simulation created by using SimCity 4. Specifically, I hope to show the pedagogical advantages of using such a scenario in the technical writing classroom but I also seek to find out how such an activity could be better adapted for such a use. I begin by highlighting the shape of the town of Lakeville. It is a town of about 12,000 Sims and growing. The town began along the main lake and spread out from there.
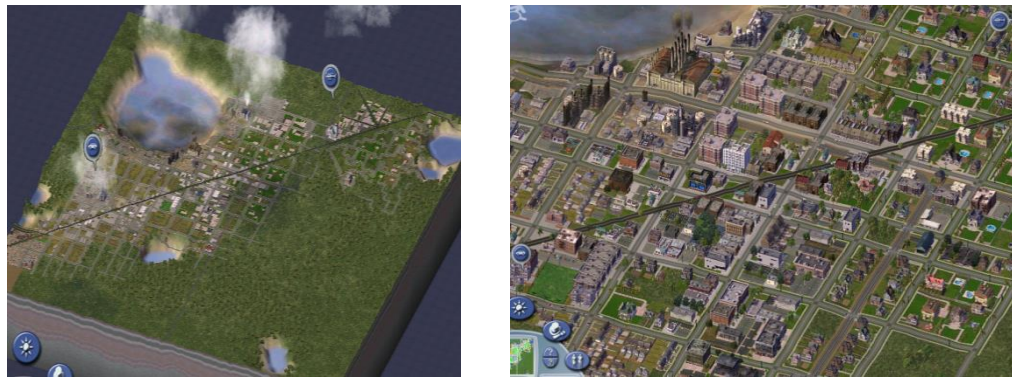
Figure 6.4 Screen captures that showcase the shape and size of Lakeville. The downtown area spread out from the biggest lake in the area.

Eventually, due to the spread of commercial and industrial establishments, residents began commuting from the neighboring town to the west, thus helping to create sprawl. As we focus in on Lakeville (Figure 6.4), we can see that the town has a coal

plant right next to the Lake, which has caused the lake to become polluted. The town is for the most part platted with a grid-like pattern. Neighborhoods have propped up along the main street which runs southwest to northeast. Along Main Street, numerous residential and commerical buildings have developed over time. However, heavy industrial development has sprung up along the lake on the western side of town. Like many of the cities in the united states, the downtown area had historically been devoted to industrial interests and it has been difficult to reclaim this space for other uses, leading to, as mentioned, an environmental problem regarding the town's drinking water.

At some point, the wealthier residents of Lakeville left the main town to settle just east of the city by two smaller lakes (Figure 6.5). This area of the town was designed to mimic some of the exurbs that exist, sprawled away from American cities. Although this small neighborhood, which I will call Lakeville Heights, was built along the Main Street, it only connects to Main Street via two points, thus ensuring that very little unwanted traffic makes its way into the neighborhood. Once in the Heights, one will find two schools that have been well funded, a hospital a police station, and a fire station that are all nearby but not too nearby. Moreover, trees dot the landscape in residents' backyards. To ensure that residents of "the Heights" only go in to downtown for work, commerical stores and shops were built right across Main street for their convenience.

Figure 6.5 Screen captures that showcase Lakeville Heights—the suburban community that exists away from the town square. Amenities can be found close reach.

To the west however, development is grittier, with neglected neighborhoods with long commutes, poor access to schools, police, and health services (Figure 6.6). Needing a place to put all the garbage that amassed in Lakeville, a landfill was built on the outskirts of the town which were later bought up by industrial interests and developers in search of cheap land.In contrast to the Heights, residents on the WestSide share the road with commercial and industrial interests. Indeed, fright trucks frequently pass by residential blocks.

Figure 6.6 Screen captures that showcase the West Side of Lakeville, composed of residential and industrial development.

It would be great to reimagine Lakeville differently. Figure 6.7 shows what such an endeavor would look like for the city of Lakeville. In this recreation, I have moved the

Coal Plant further out near the landfill, dotted the lake with beaches, created parks, and

plazas. This brought in larger density properties and an increase in the commuter rail

traffic. The Lake was cleaner and industrial developments were torn down to make space

for high tech companies. Residents on the West Side were also given a school, a hospital,

a fire station, and a police station. The population grew by 25% within a year. However,

such reimaginings leave out the important decisions that impact users on a local basis.

Indeed, one of the many critiques that Urban Planners have of the game is that everything

in the game happens too quickly. Buildings are bulldozed by an all-powerful mayor at her

or his merest whim. What would happen then, if we asked students to slow the game

down?

Figure 6.7 An "improved" Lakeville downtown. Note the beaches that dot the lake and the greener spaces
that permeate throughout the city. Also, development has increased along Main Street.

For example, on the west side, we see that there is massive congestion on the north-south

streets around main street and our consultant tells us that we should upgrade the street to

a road (Figure 6.8). This would be prudent and expedient. However, this would be a good

opportunity to ask students about the potential drawbacks to this type of decision in a

real-world scenario. Whom does this decision privilege and who is left out? Mainly, I am thinking of the residential houses that are around the corner and the children who might use those streets. Ideally, it would be best to separate residential from industrial areas, and although SimCity does provide for this option, it would require levelling long-standing neighborhoods that have been in place for decades. Such is the importance of considering wicked problems. How do we consider the wellbeing of those impacted by seemingly mundane decisions—whether these are manufacturing decisions or document or software design decisions?

Figure 6.8 The congestion along this street calls for a quick solution from our transportation advisor.

Moreover, following the prescribed solutions of any system may not necessarily yield intended outcomes. To illustrate, upgrading the congested street I mentioned above to a road, brought some relief to the congestion problem, and although it did not increase the traffic on that particular road, inexplicably, congestion worsened on the east-west streets that cross it. Such is the unpredictability of wicked problems (Figure 6.9).

Figure 6.9 With the construction of the road, other nodes of the system were impacted resulting in an unforeseen congested street on the West side of Lakeville.

To give another example, with the coal pollution getting into the water supply, the mayor of Lakeville was asked to build a Water purification plant. Luckily, there was enough money to build the facility, but where should it go? There is certainly more than enough space in Lakeville to continue building outward but at what point does one begin to worry about sustainability? Filling in every nook and cranny of the board is possible and may solve immediate problems, but should we? What will happen as we continue to sprawl based on our needs? I was able to craft a spot for the water treatment plant, but it came at the cost of 200 jobs and 6 houses, which, again, seems like a minor issue, but when we ask students to consider the individuals whom their decisions impact, my hope is that we can engage in larger discussions of equity. A more complicated issues that arose was that the water treatment plant brought land value down, which in the game means that fewer people and businesses want to live in the area, causing a problem for residents who already reside there and in reality would add to sprawl.

Similarly, in response to the high crime rate on the West Side of Lakeville, students may automatically respond to build a police station but to what degree do police stations reduce crime? And once a station is there, what can we imagine will happen afterward? Obviously the answers to these questions are contextual but my hope is that this activity will act as a springboard to such important issues. My hope is that students would not stop after considering or implementing these changes, but rather follow the trail of gameplay that unravels afterwards, seeing what happens when they account for one problem, only to have others develop and take count of how the city changes and who is impacted every step of the way in response to their choices.

<div align="center">6.7   The Logistics of Play</div>

There are, of course, many logistical concerns—both pedagogical and technological—that come with proposing that students use SimCity to investigate wicked problems. I will discuss the technological constraints first. Cost is an initial factor. While the game can be purchased for under $20 at the time of this chapter being written, this is only the case for the PC version. Secondly, instructors would obviously need to have a familiarity with the game's interface because even though it uses a highly intuitive interface, the different design choices do take time to learn. This becomes a concern for novice student players as well who have never played the game before. Instructors must also determine how much time to allow for students to become familiar with the game before they can begin the activity. And, should students practice by building several mock cities first or practice for several days directly *on* the city which they will use for the activity? Additionally, IT departments would need to allow students to install software directly onto a campus PC, which may not always be allowed. Failing that,

students would need to bring in their own laptops to class on certain days to help with gameplay and to obtain answers to any problems that arise. That all said, using games in the classroom is not by any means a new prospect and despite these technological questions, SimCity, with some careful planning, could be implemented as a pedagogical tool.

That all said, accounting for every one of the technological issues above still leaves us with determining how best to connect SimCity and wicked problems into an established curriculum. In a version of this paper, presented at the 2015 Computers and Writing conference, an audience member asked how this activity would fit into a technical writing course. This is a very important question and one that merits some thought because although I do believe that teaching students about the stickiness of wicked problems has important implications, we must determine how best to begin such conversations. To that end, I can see this activity as fitting in as a precursor to talking about reports, and environmental impact statements in particular. Jones et al. (2012) have already looked at how audiences respond to the ways in which environmental impact reports are written, noting that good design principles and an audience-centered ethos helps environmental policy documents be more readily received by a public. I see an opportunity here to talk to students about the decisions that go in to environmental policies before documents are conceived however, having them take note of the ideologies that inform certain choices over others. This would be particularly useful if we think of wicked problems as Blythe, Grabill, and Riley (2008) conceptualize do—as exigences that require active listening to numerous stakeholders.

After noting how their in-game design decisions produced particular effects, students could research how those decisions have actually impacted local communities through a backgrounder report, and then write a proposal for Sim Cities such as Lakeville to 1) tackle design problems in ways that allowed for iterative changes to spaces and 2) create more participatory methods for soliciting community feedback from local Sim residents that move beyond or act in combination with the typical "community meeting" which, as I have discussed in previous chapters has shortcomings of its own.

More generally, if we approach wicked problems as heuristics for teaching students about document design and writing, gameplay could be used to begin conversations about the slipperiness of an end-design. Much like Sims may use thoroughfares and neighborhoods in unanticipated ways (including not at all), students can learn that the use of documents, webpages, and other artifacts of design is never completely predetermined. Having had first-hand (although virtual) experiences with failed downtown renovations, trains that have low ridership, and other design choices that don't work out the way that students had intended, gameplay may lead to topics that highlight the importance of active engagement with users at all stages of a design process. These are only a few ideas that immediately become apparent. More will likely make themselves apparent after implementing this proposal.

I end here by pondering on Bertha's recent immobility under the city of Seattle after having plowed through only 1/9th of her task. This much-publicized setback to (some) Seattleites' dreams of becoming more connected to their waterfront brought with it a litany of complaints, calls for new ideas to deal with traffic issues, as well as proposals for fixing Bertha. While it is not known exactly why Bertha overheated and

became stuck, what is certain is that this development has led to much doubt on the viability of mega-projects and a redoubling of blame between stakeholders such as between the Washington State Department of Transportation and STP, the tunneling contractor. Additionally, I am intrigued by Karen Weise's observation that the breakdown caused workers to pump "water to keep Bertha's rescue pit from flooding. That likely caused the ground to sink by as much as 1.4 inches, potentially destabilizing the viaduct and nearby buildings" (p. 56). While some stakeholders may have certainly realized that there would be a few setbacks in the project, I doubt that even the most immovable of opponents to the plan could have predicted that pumping water underground causing the land to sink would have fallen within the realm of worst-case scenarios.

Again, projects of this kind likely encounter such problems along the way. But this does make me wonder about the future of the project—once it is completed (whether it ends up looking like what designers had hoped or not), whom will be impacted and how will decision-makers (like many of the students in our class) respond to the needs that stakeholders identify as stemming from this project? Asking students to ponder the implications of their choices through hands on experiences may be one way to begin approaching that conversation.

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APPENDICES

Appendix A Artifacts of Design in Professional Writing and Technical Communication Research

Author	Year	Abbreviated Article Title	Artifact(s)	(Below)	Test	Critique	Observe (Above)	Create	Consult
Brumberger	2007	Visual Communication Practices	Broad				X		
Ding	2000	Influence of Burke	Broad				X		
Hawk	2004	Toward a Post-Techne	Broad				X		
Johnson	2010	Ubiquity Paradox	Broad				X		
Kimball	2013	Visual Design Principles	Broad				X		
Koerber	2000	Toward a Feminist Rhetoric	Broad				X		
Kumpf	2000	Visual Metadiscourse	Broad				X		
Salvo	2001	Ethics of Engagement	Broad				X		
Selber	2004	Cs Diss Award in TC	Broad				X		
Spinuzzi	2002	Toward Integrating Our Research Scope	Broad				X		
Suchan	2014	Gauging Openness to Written Communication	Broad				X		
Suchan	2001	Effect of Interpretive Schemes in Videoteleducation	Broad				X		
Swarts	2008	Information Technologies	Broad				X		
Whittemore	2012	Immutable Mobiles revisited	Broad				X		
Wickman	2014	Wicked Problems in TC	Broad				X		
Williams	2010	Interpretive Discourse and Other models	Broad				X		
Wright	*2012*	*Redesigning Informed*	Brochure					X	

		Consent						
Johnson	*2006*	*A Decade of Research*	Brochure			X		
Scott	2008	The Practice of Usability	Brochures	X			X	
Clark	2007	Content Management and the Separation	CMS/database			X	X	
Sapienza	2002	Does Being Technical Matter	CMS/database			X	X	
Schneider	2005	Usable Pedagogies	CMS/database			X		
Whittemore	2007	Metadata and Memory	CMS/database			X		
Bacha	2012	Taxonomies	CMS/database (VC@P)	X			X	
Bellwoar	2012	Everyday Matters	Diagrams		X			
Brasseur	2005	Florence Nightingale	Diagrams		X			
Agboka	2013	Participatory Localization	Documents (Marketing)		X			
Graham and Whalen	*2008*	*Mode Medium and Genre*	E-cards		X			
Kim et al.	2008	Keeping users at the Center	Forms	X			X	
Wright	2012	Redesigning Informed Consent	Forms	X			X	
Lavid and Taboada	2004	Stylistic Differences in Multilingual	Forms		X			
Tebeaux	2000	Visual Texts	Forms		X			
Varpio et al	2007	Seeing and Listening	Forms		X			
Graham and Whalen	*2008*	*Mode Medium and Genre*	Games		X			
Salinas	2002	Technical Rhetoricians and Configuring Images	Image		X		X	
Cronn-Mills	2000	A Visible Ideology	Image		X			
David	2001	Portraits of Professional Women	Image		X			
Tebeaux	1999	Designing Writing Communication along the	Letters		X			

		Shifting Cultural							
Johnson	*2006*	*A Decade of Research*	*Manual/Instructions*		X				
Ramey	*2013*	*Coffee Planter*	Manual/Instructions		X				
Friess	2011	Politeness, Time Constraints	Manuals/Instructions		X		X		
Friess	2010	Designing From Data	Manuals/Instructions		X		X		
Bellwoar	*2012*	*Everyday Matters*	Manuals/Instructions		X				
Brumberger	*2010*	*Document based decision Making*	Manuals/Instructions		X				
Catanio and Catanio	2010	Effects of Integrating on-going Training	Manuals/Instructions		X				
Ganier	2009	Observational Data	Manuals/Instructions	X	X				
Longo and Wienert	2007	Implementations of Medical research findings.	Manuals/Instructions	X	X				
Tebeaux	2008	Technical Writing in English Ren Shipwrightery	Manuals/Instructions		X				
Willerton and Hereford	2011	Evaluating Applications for an Informal Approach to Information Design	Manuals/Instructions	X	X				
Dannels	2000	Learning to be Professional	Mechanical Products						X
Wojahn	2010	Blurring Boundaries between TC and Engineering	Mechanical Products						X
Cooke	*2003*	*Information Acceleration and Viz*	Newspapers		X				
Lauer	2012	Reflective Assessment	Poster				X		
Lauer and Sanchez	2011	Visuospatial Thinking in the Professional Writing Classroom	Poster				X		
Ward	2010	Ethic of Exigence	Poster		X				
Johnson	*2006*	*A Decade of Research*	Proposal				X		

Rude	2004	Toward an Expanded Canon of Delivery	Report			X			
Jones et al.	2012	Plain Language in Environmental	Report (EIS document)			X			
de Jong Lentz	2001	Design and Evaluation of Software Tools	Software	X	X			X	
Smart and Whiting	2002	Using Customer Data to Drive Documentation	Software		X			X	
Albers	2011	Design and Usability	Software			X	X		
Wolfe and Neuwirth	2001	From the Margins	Software			X			
Bellwoar	*2012*	*Everyday Matters*	Sonograms			X			
Carliner	2000	Taking Cues from the Culture	Space			X			
Ramey	*2013*	*Coffee Planter*	Space			X			
Salvo et al.	2010	Children of Aramis	Space			X			
Welch	2005	TC and Physical Location	Space			X			
Sun	2006	Triumph of the Users	Text Messages		X	X			
Wright	*2012*	*Redesigning Informed Consent*	Video					X	
Stolley	2009	Integrating Social media	Web 2.0					X	
Potts and Jones	2011	Contextualizing Experiences	Web 2.0			X			
Rawlins and Wilson	2014	Agency and Interactive Data Displays	Web 2.0			X			
Sherlock	2009	Genre Activity and Collaborative Work and Play	Web 2.0			X			
Zdenek	2007	Just Roll your Mouse Over Me	Web 2.0			X			
Walker	2002	Theoretical Foundations for Website Design Courses	Website			X		X	
Andrews et al.	2012	New Method in User Centered Design	Website	X	X			X	
Bacabac	2013	Creating	Website					X	

Author	Year	Title	Medium						
		Professional E-Portfolios							
Henson	2005	Using the Internet as a tool for Public Service	Website					X	
Johnson	*2006*	*A Decade of Research*	Website					X	
Youngblood	2013	Communicating Web Accessibility	Website	X				X	
Albers	2009	Design for Effective Support of User Intentions	Website				X		
Norman and Frederick	2000	Integrating Technical editing	Website				X		
Cushman	2014	Unstable Artistry	Website			X			
Graham and Whalen	2008	Mode Medium and Genre	Website			X			
OHara	2004	Curb Cuts on the Information Highway	Website			X			
Sidler and Jones	2008	Genetic Interfaces	Website			X			
Spoel	2008	Communicating Values, Valuing Community	Website			X			
St. Amant	2005	Prototype Theory Approach to Web Analysis	Website			X			
Walters	2010	Toward an Accessible Pedagogy	Website	X					
Cooke	*2003*	*Information Acceleration and Viz*	Websites					X	
Brumberger	*2010*	*Document based decision Making*	Websites			X			
Richards	2009	Music Transtextuality	Websites			X			
Richards and David	2005	Decorative Color	Websites			X			
Artemeva and Freedman	2001	Just the Boys	N/A (Communicating)						X
Brinkman and Vander Geest	2003	Assessment of Communication Competency	N/A (Communicating)						X

Dannels	2003	Teaching and Learning Design Presentations in Engineering	N/A (Communicating)						X
Dannels	2009	Features of Success in Engineering Design Presentations	N/A (Communicating)						X
Dannels	2011	Relational Genre Knowledge	N/A (Communicating)						X
Dannels and Martin	2008	Critiquing Critiques	N/A (Communicating)						X
Friess	2013	Newbie into the Fold	N/A (Communicating)						X
Gaffney	2013	Communication Instruction in Landscape Arch	N/A (Communicating)						X
Galbraith et al	2014	Impact of Presentation form on Grant	N/A (Communicating)						X
Gruber et al.	1999	Writing4practice	N/A (Communicating)						X
Mackiewicz	2008	Comparing PowerPoint Experts	N/A (Communicating)						X

Appendix B Consent Forms

ONLINE RESEARCH PARTICIPANT CONSENT FORM
Toward a Composing Process of Urban Designers
Patricia Sullivan (Principal Investigator)
Fernando Sanchez
Department of English
Purdue University

What is the purpose of this study?

The purpose of this study is to investigate urban designers' process of composing when they design urban projects. This study seeks to determine what concepts and theories urban designers are taught to implement as they draft. In particular, as the fields of rhetoric and technical communication have begun to examine the ways that people in communities engage in public debate in order to protect their neighborhoods from unwanted or poorly conceived urban development, it is important to bring the theories undergirding urban design to light so that community members, rhetoricians, and those involved in planning can discuss competing values or find common ground upon which to start these debates.

In order to get at this information, the researchers are looking for students enrolled in graduate or undergraduate programs that emphasize urban design. These include but are not limited to civil engineering, urban planning, architecture and landscape architecture. To be considered for this study, you must currently be engaging in a design project for your coursework or thesis, or as part of a community partnership.

What will I do if I choose to be in this study?

If you choose to be in this study, you will be asked to share copies of your drafts as your design changes and morphs over the course of your semester or partnership. These can be shared by scanning your work or taking pictures of it and emailing it to the researchers. You only need to share the drafts that capture large iterative changes. You will also be asked to reflect on the small changes that you make to your draft in a journal that you will share with the researchers. Lastly, based on these reflective journals, you will be asked to meet with the investigators for three interviews of approximately one hour each over the course of three months, or during a semester. Due to distance, these interviews may take place via Skype or related online video software should it be difficult to meet face-to-face.

How long will I be in the study?

The researchers are requesting that participants stay in contact via journals, drafts, and three one-hour interviews over the course of three months or a semester, depending on the participants' timeline. There is a slight chance that you may be contacted after the

final interview in order to clarify or expand on certain answers. You may choose to decline the follow up interview without any risk or penalty.

What are the possible risks or discomforts?

There are minimal risks associated with this study. We will ask you questions about how you plan your designs and what priorities you place on these designs. You may feel it necessary to justify your decisions or designs, though the researchers are only interested in knowing more about your field. Although there is also a risk of breach of confidentiality in this research, safeguards, as listed in the confidentiality section, are in place to keep this risk low.

Are there any potential benefits?

There are no direct benefits associated with participating in this study. This project asks you to reflect on your designs and your assumptions on how people use space. Studies in the field of writing and technical communication have suggested that people strengthen their content and procedural knowledge when they are asked to reflect on the choices that they make when writing and designing. You may leave this research study with a better idea of how to better apply the concepts you have learned regarding usability and design through reflection.

Is there any compensation?

Students participating in this research project will receive a stipend of $300.00 for completing the study and three interviews.

Will information about me and my participation be kept confidential?

The researcher will not identify you by name in any reports using information obtained from this interview. Any names mentioned during the interview will also be anonymized to protect all individuals' confidentiality. Any identifying information in the written materials that you provide will be changed to protect confidentiality. Should any drafts provided reveal identifying information about you or a client you are working with, the draft will only be described and not included in any reports written based on this research. Only the researchers will have access to the recordings obtained from these interviews. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions. The project's research records may be reviewed by departments at Purdue University responsible for regulatory and research oversight.

What are my rights if I take part in this study?

Your participation in this study is voluntary. Note that although any monetary compensation for this project is contingent upon completion of the expectations listed

above, you may choose not to participate or, if you agree to participate, you can withdraw your participation at any time.

Who can I contact if I have questions about the study?

If you have questions, comments or concerns about this research project, you can talk to one of the researchers. Please contact Fernando Sanchez as the first point of contact at (708) 574-4777 or fsanchez@purdue.edu. You may also contact Patricia Sullivan as the Principal Investigator at (765) 494-3768 or psullivan@purdue.edu. You may also write to either investigator at 500 Oval Drive, West Lafayette, IN 47907.

If you have questions about your rights while taking part in the study or have concerns about the treatment of research participants, please call the Human Research Protection Program at (765) 494-5942, email (irb@purdue.edu) or write to:

Human Research Protection Program - Purdue University
Ernest C. Young Hall, Room 1032
155 S. Grant St.,
West Lafayette, IN 47907-2114

VITA

VITA

FERNANDO SÁNCHEZ

EDUCATION

Ph.D., English
Purdue University
West Lafayette, IN. expected May 2016

Primary Area: Rhetoric and Composition
Secondary Areas: Professional Writing and Public Rhetorics; Writing Program
Administration; Queer Rhetorics

Dissertation: "Communication in Place-Making Professions: Exploring the Network
Pictures, Technologies, and Ideologies of Urban Designers."
Committee: Dr. Patricia Sullivan, Dr. Michael Salvo, Dr. Jennifer Bay, Dr. Bradley
Dilger

M.A., English
University of St. Thomas
St. Paul, MN. May 2010

M.S., Counseling Psychology
University of Wisconsin–Madison
Madison, WI. May 2006

B.A., English, Spanish, Psychology
Wabash College
Crawfordsville, IN. May 2004

PUBLICATIONS

Refereed Articles

"Re-Experiencing Space: Mapping Campus Terrains through Disabilities." Pedagogy.
Status: Revise and Resubmit. 31 double-spaced manuscript pages.

2016   "The Roles of Technical Communication Researchers in Design Scholarship."
       Journal of Technical Writing and Communication. (In Press) 32 double-spaced
       manuscript pages.

2015   "Locating Queer Rhetorics: Revealing Local Infrastructures through Maps."
       Computers and Composition 38 (2015): 96-112. Co-written with Don Unger.

2014   "Engaging Writing about Writing Theory and Multimodal Praxis: Remediating
       WaW for First Year Composition." Composition Studies 42.2 (2014): 118-146.
       Co-written with Liz Lane and Tyler Carter.

2013   "Creating Accessible Spaces for ESL Students Online." WPA: Writing Program
       Administration 37.1 (2013): 161-185.

2012   "Queer Transgressions: Same-Sex Desire and Transgendered Representations in
       Aravind Adiga's The White Tiger." Trans-scripts 2 (2012): 176-190.

Book Chapters

2016   "Crossbreeding Disciplines: Collaboratively Developing a Writing Culture in
       Animal Sciences Courses." In Alice Myatt and Lyneé Gaillet (Eds). Writing
       Programs, Collaborations, and Partnerships: Working Across Boundaries.
       Palgrave MacMillan. (in press, 2016). Co-written with Stacy Nall.

Work in Progress

"Queering Business Presentations." For submission to Business and Professional
Communication Quarterly.

"Stewards of Infrastructure: Writing Centers and Technological Uptake." For submission
to The Writing Center Journal.

Newsletter Columns

2010   "The Master's Essay." Writing in the Margins Spring 2010: 13. University of St.
       Thomas Department of English. St. Paul, MN. Print. Co-written with Rachel
       MacDonald.

2009   "Addressing the Blank Page." Writing in the Margins Fall 2009: 12. University of
       St. Thomas Department of English. St. Paul, MN. Co-written with Rachel
       MacDonald.

Purdue OWL Content

2013   "Undergraduate Application Timeline and Additional Resources" and inclusive
        materials in subsections. https://owl.english.purdue.edu/owl/resource/978/1/

2015   "Medical Writing: SOAP Notes" and inclusive subsections. Co-written with Lily
        Hsu. https://owl.english.purdue.edu/owl/resource/1003/01/

Encyclopedia Entry

2014   "1910 Oregon Earthquake." In Disasters and Tragic Events: An Encyclopedia of
        Catastrophes in American History. Mitchell Newton-Matza (Ed.), New York:
        ABC-CLIO (2014): 202-203.

TEACHING

Professional Writing Major Courses

Introduction to Research for Professional Writers (Purdue University; 1 section of 203)
Implemented course to introduce students in the Professional Writing major to research
methods in professional writing. Topics focus on ethics in research, workplace studies,
and qualitative methods. Students produce research proposals, annotated bibliographies
and presentation reports.

Professional Writing Courses

Technical Writing (Purdue University; 1 section of ENGL 421)
Developed a technical writing course focused on issues of design and wicked problems.
Assignments included technical descriptions of spatial features of campus as well as a
usability exercise through mapping campus through disabilities. Students also engaged
with the game SimCity 4 to write proposals on wicked problems, discussing how design
solutions yield new problems.

Technical Writing Online (Purdue University; 1 section of ENGL 421Y-Online)
Developed assignments and exercises for online delivery of instruction. Assignments and
activities reflected workplace writing in technical communication settings. Reports,
online instructions, and job documents comprised the core of the coursework. In order to
successfully complete assignments, students collaborated, conducted user analyses, and
managed documentation from distant locales.

Professional Writing (Saint Mary's University; 1 section of COM 309)
Implemented a curriculum for returning students in the workforce enrolled in a bachelor's
completion program. Incorporated work experience of adult learners into units on
correspondence, background research, and proposal writing.

Writing for Health and Human Sciences (Purdue University; 4 sections of ENGL 422)
Coordinated with community partners to present real-world writing scenarios for students in the College of Health and Human Sciences. Throughout the four sections I taught, projects in the course asked students to practice writing for multiple audiences; these included funding agencies (Grant project), lay audiences (Health Information Materials project), and other professionals (In-Service Project). In total, students earned $4,500.00 in grant funding for their projects across 3 sections of the course. Students also practiced writing detailed, objective, and patient-centered notes and presented their findings on the disability maps they created of campus at the Purdue Professional Writing Showcase.

Business Writing (Purdue University; 2 sections of ENGL 420)
Innovated a curriculum in business communication that centered on matters of place. Students conducted background research on impending disasters that will impact specific locations of their choosing. Students also designed marketing materials for cities and towns wanting to increase tourism.

Composition Courses

First-Year Composition: Writing About Writing (Purdue University; 3 sections of ENGL 106)
Implemented Teaching for Transfer courses centered on linking writing in the classroom with workplace and community writing. This course also asked students to connect their daily digital writing to course material. For example, students used Tumblr to track their literacy sponsors and composed on WordPress to describe the discourse communities that they belong to. These blogs were then shared with and critiqued by students in other sections of the course implementing similar projects.

First-Year Composition Learning Community (Purdue University; 1 section of ENGL 106R)
Partnered with Secondary Education instructors to implement a writing course for first-year students enrolled in the TEACH learning community, who take coursework together. Course centered on Writing about Writing pedagogy and digital rhetorics pedagogy in which students used Tumblr to track their literacy sponsors and composed on WordPress to describe the discourse communities that they belong to.

Critical Reading and Writing I (University of St. Thomas; 1 section of ENGL 111)
Implemented a Fiction and Non-Fiction prose comp-lit course which focused on having students learn different literary genres (memoirs, short stories, novels), appreciate diverse cultural perspectives, engage in written discourse with texts they read by constructing well thought out theses, and practice different types of high and low-stakes writing (journal entries, formal papers, cover letters).

Critical Reading and Writing II (University of St. Thomas; 1 section of ENGL 112)

Implemented a drama and poetry comp-lit course which asked students to engage in close reading and analysis of various poems (in terms of rhythm, meter, metaphor, etc.). Students also learned the language of stage production, conducted academic research, and used textual evidence to support their claims.

WRITING CONSULTATION

Writing Across the Curriculum Positions

Animal Breeding (Purdue University; 6 sections of ANSC 311)
Delivered and revised a writing curriculum for students in an Animal Sciences course on Genetic Breeding. Held in-class and out-of-class workshops to teach students about business correspondence, annotated bibliographies, report writing, and using textual and graphic evidence to back up claims.

Writing Center Positions

Writing Center Graduate Consultant (Saint Mary's University of Minnesota; 3 semesters)
Tutored graduate students on writing projects for coursework throughout the university including courses in the MBA program, the Master's in Nursing program, and the Master's in Clinical Psychology program. Led workshops and held consultations on topics such as using APA style, evaluating online sources, strengthening arguments, and paying attention to mechanics and syntax.

OTHER TEACHING POSITIONS

Graduate Teaching Assistant. PSY 160: Human Sexuality (University of Wisconsin – Madison; 4 sections).
Implemented a curriculum for four discussion sections of a large undergraduate course taught by Dr. Janet Hyde. Developed test items, coordinated with other teaching assistants to deliver consistent activities, and graded student essays on course texts.

Graduate Teaching Instructor. SPA 101: Introduction to Spanish (University of Wisconsin – Madison; 1 section)
Developed a curriculum for a course that met five times a day to help graduate and undergraduate students develop their proficiency with a foreign language. Developed test items, created participatory activities that encouraged engagement, and graded short student essays as they become more comfortable with speaking and writing in Spanish.

Undergraduate Tutor. SPA 101: Introductory Spanish. (Wabash College; 1 section)
Led a weekly discussion group for students in a Spanish 101 course. Coordinated with the instructor of the course to help students practice their written and verbal Spanish abilities.

SELECTED PRESENTATIONS

Professional Writing and Technical Communication

2015 "'Response Ability' in Issues of Health Literacy." Poster Presentation. National Council of Teachers of English Convention, Minneapolis, MN. November 2015.

2015 "Eliza in Sim City: Exploring the Role of V(irtual)-Humans in Technical Writing." Computers and Writing. Menomonie, WI. May 2015.

2015 "The Composing Process of Urban Planners." Conference on College Composition and Communication. Tampa, FL. March 2015.

2015 "Finding Our Place in Space: Comparing the Values of Design in Technical Communication and Urban Design." Association of Teachers of Technical Writing Conference. Tampa, FL. March 2015.

2014 "Diversity in the Wild." Midwest Association of Business Communication Conference. Minneapolis, MN. April 2014.

2014 "Writing about Human Health: Opportunities for Rearticulating Program Identity." Council of Programs in Technical and Scientific Communication Annual Meeting. Colorado Springs, CO. October 2014.

2014 "ReMapping Campus Pathways through Disabilities." Society for Disability Studies Conference. Minneapolis, MN. June 2014.

Digital Humanities

2015 "Engaging Spatial Rendering Technologies: Urban Design, Ideology, and the Body." The Great Plains Alliance for Computers and Writing Conference. St. Paul, MN. October 2015.

2015 "Presumed Ubiquity & Tangible Networks: The Materiality of TechnoRhetorical Work." Roundtable with Michael Salvo and Adam Strantz. Computers and Writing. Menomonie, WI. May 2015.

2014 "Responding to the Map: Using Maps to Create an Awareness of Space and Connectivity." Thomas R. Watson Conference. Louisville, KY. October 2014.

2014 "Discursive Pursuits: Analyzing Discourse Communities in Popular Culture." Popular Culture Association/American Culture Association Conference. Chicago, IL. April 2014.

2014 "Digital Assemblages: Constructing Rhetorical Situations with Graphic Editing Software." Computer Connection at CCCC. Indianapolis, IN. March 2014.

2012 "Out of the Closet and into the Archive: Queer Scholarship and Visibility in Composition and Rhetoric." Co-presented with Don Unger. Thomas R. Watson Conference. Louisville, KY. October 2012.

2012 "Usability at the Center: Making Writing Center Websites Accessible to ESL Students." Symposium on Second Language Writing. West Lafayette, IN. September 2012.

2012 "Blogsolation: When We Come Out to No One (and Everyone) Online." Computers and Writing Conference. Raleigh, NC. May 2012.

2013 "Stewards of Infrastructure: The Increasing Digital Qualifications and Responsibilities of Writing Center Staff." Midwest Writing Centers Association. Chicago, IL. October 2013.

Writing Program Administration

2016 "Of Evolutions and Mutations: Assessment as Tactics for Action in WAC Partnerships." Conference on College Composition and Communication, Houston, TX. April 2016. [accepted]

2014 "Moving Away from Entropy: WPA Assessment of 'Orphan' WAC Programs." Writing Program Administration Conference. Normal, IL. July 2014.

2014 "Moving From Conference Presentations Into Publications." Roundtable with Tom Sura and Joan Mullin. Writing Program Administration Conference. Normal, IL. July 2014.

2014 "Assessment of/in the First Year of a Decade-Long WAC Partnership." International Writing Across the Curriculum Conference. Minneapolis, MN. June 2014.

2013 "Mind Your Place: Re-Forming the Role of the WPA." Council of Writing Program Administrators Conference. Savannah, GA. July 2013.

2011 "When the Writing Center is the Center of Writing" with Cheryl Prentice and Alex Urquhart. Midwest Writing Center Association Conference. Madison, WI. October 2011.

History of Rhetoric

2013   "Walking in the Polis: Urban Planning's Material Influence on Aristotle's Topoi in the Rhetoric." Conference on College Composition and Communication. Las Vegas, NV. March 2013.

2012   "Modern (Class)Warfare: Exclusion and Conformity in Education During the Modern Period of Rhetoric and Today." Co-presented with Stacy Nall. Working Class/Poverty Class Academics Conference. Madison, WI. July 2012.

INVITED TALKS

"The Rhetoric of Urban Design: Integrating Discourse and Design in Multimodal Texts." Lecture open to the public presented at the University of St. Thomas. St. Paul, MN. March 2015.

"None Among All." Reading of segment of novel written for the Hockenberry Fellowship open to the public and presented at Wabash College. Crawfordsville, IN. April 2003.

MENTORING

Graduate Workshops and Instruction at Purdue

"Disability Maps." Invited discussion in ENGL 680A: The Rhetoric of Access. Instructor: Michael Salvo. October 15, 2015.

"Publishing in the Humanities." Invited discussion in GENG 573: Professional Editing. Instructor: Alexis Easley. March 12, 2015.

"Hugh Blair and George Campbell." Invited lecture, discussion, and activities in ENGL 624: Issues in Composition Studies: Modern Period. Instructor: Patricia Sullivan. October 24, 2014.

"Teaching Assignments in English 422: Writing in the Health and Human Sciences." Invited discussion in ENGL 505M: Professional Writing Mentoring. Instructor: Michael Salvo. November 12, 2014.

"Effective Conferencing with Students in First Year Composition." Workshop for the Introductory Composition at Purdue Program. September 4, 2014.

"Professional Writing Assignments and Curricula." Workshop for the Professional Writing Program. February 12, 2014.

"What You Can Teach Next." Workshop for the Introductory Composition at Purdue Program. February 11, 2014.

"Animal Sciences WAC Assignments." Lecture for Writing Lab tutors. October 15, 2013.

"Remediating Literacy Narratives with Tumblr." Workshop for the Introductory Composition at Purdue Program. September 18, 2013.

Undergraduate Workshops and Instruction at Purdue

"New Chauncey Neighborhood Service Learning Project." Invited lecture in ENGL 108: Accelerated First Year Composition. Instructor: Stacy Nall. October 15, 2014.

"Dreamweaver and Web Design." Lecture, discussion and activities for ENGL 488: Internship in Professional Writing. Instructor: Stacy Nall. February 26, 2014.

"New Chauncey Neighborhood Service Learning Project" invited lecture in ENGL 108: Accelerated First Year Composition. Instructor: Katie Yankura. September 23, 2013.

ASSESSMENT PROJECTS

Programmatic Assessment of the Animal Sciences (ANSC) 311 WAC Curriculum. Purdue University. 2014-present.
Worked closely with Animal Science department to design and distribute surveys to Animal Science alumni and employers who hire animal science graduates in order to assess their values of writing. Results from analysis will guide modifications to the curriculum.

Programmatic Assessment of the Professional Writing Program. With Michael Salvo and Charlotte Hyde. Purdue University. 2013-present.
Collaboratively designed and distributed survey questionnaire to professional writing majors and students in business writing, technical writing, and healthcare writing to determine if goals, means, and outcomes are being met and to measure students' perceptions of writing.

SERVICE

Committee Work

President of Rhetoric Society of America, Purdue Chapter. 2014-2015.
Led student meetings, conducted fundraising, and wrote grants to obtain funding. Was responsible for performing outreach and coordinating with other entities and organizations on campus. Reached out to outside and local speakers for RSA lectures.

Member of Professionalization Committee. Council of Writing Program Administrators-Graduate Organization. 2014-present.
Organized sessions for CWPA conference, performed outreach to call for participants for these sessions, and conducted analysis of feedback from audience members' surveys for future session planning.

Syllabus Approach Leader for Writing About Writing (WaW). Pedagogical Initiatives Committee, Purdue University. 2013-2014.
Observed writing instructors during class sessions, provided instructors with written and verbal feedback on teaching methods, and recommended textbooks for program approval.

Writing Center Representative. Curriculum Committee, Saint Mary's University of MN. 2010-2011.
Responsible for assessing syllabi to ensure they met approved goals, means, and outcomes according to several programs and departments.

Graduate Student Representative. Graduate English Committee, University of St Thomas. 2009-2010.
Performed outreach to graduate students and presenting their feedback regarding the program at Graduate Faculty meetings; coordinated with local establishments to organize graduate student social events.

Reviewer Work

Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture. Provided feedback on manuscript submission to co-editors of peer-review journal. 2015.

International Writing Across the Curriculum Conference. Blind-reviewed conference proposals for the 2016 IWAC conference in Ann Arbor, MI. 2015.

The Writing Campus: Blog for Writing Across the Curriculum at George Mason University. Blind-reviewed submissions for publication on the blog. 2014-present.

Writing Program Administration—Graduate Organization Professional Development Committee. Reviewed proposals from potential roundtable participants for CWPA Conference in Boise, ID. 2015.

PROFESSIONAL WRITING PROJECTS

Managing ten health information projects across three sections of ENGL 422 in partnership with Westminster Village in West Lafayette, and Food Finders and Creasy Springs in Lafayette, IN. 2014, 2015. Responsibilities included:

- Providing students feedback on their grant proposals and individual project ideas.
- Teaching students about professional genres (letters, reports, memos) to keep our community partners informed of their progress.
- Instructing students on methods for conducting user testing on their prototypes.

Developing instructions and conducting usability testing for the Celery Bog WebCam with the Lilly Nature Center. Lafayette, IN. 2012. Responsibilities included:
- Assessing Nature Center educational needs.
- Translating needs into actionable project work.
- Developing training documents for multiple users.
- Implementing testing to determine solution effectiveness.

Drafting an alternate New Chauncey Neighborhood land use plan with the New Chauncey Neighborhood Association. West Lafayette, IN. 2012. Responsibilities included:
- Conducting resident interviews and secondary research for stakeholders.
- Collaborating with local neighborhood leaders on zoning plans.
- Documenting neighborhood expectations and suggestions.
- Presenting recommendations to local city planning commission and city council.

Digitizing original New Chauncey plat books with West Lafayette City Hall. West Lafayette, IN. 2012. Responsibilities included:
- Coordinating with Purdue Libraries to access digitization equipment and processes.
- Creating accessible versions of 1865 plat books of New Chauncey for use online.
- Securing funding for digitization service.

TECH EXPERIENCE

Webmaster for the Purdue Online Writing Lab (OWL) at Purdue University, 2015-2016. Responsible for using HTML, CSS, and Javascript languages to maintain OWL functions online. Oversaw and coordinated with other institutional entities to ensure smooth launch of the OWL mobile site.

Webmaster for the Graduate Student English Association (GradSEA) at Purdue University, 2013-2014.
Responsible for updating content of the GradSEA website to reflect latest minutes, elections, and events.

Webmaster for the Writing About Writing (WaW) syllabus approach at Purdue University, 2013.
Responsible for uploading content such as possible activities and readings for all instructors of the WaW syllabus approach to use in their teaching.

Technology Steward for the Writing Center at Saint Mary's University of Minnesota. 2010-2011.
Responsible for redesigning, maintaining and updating the Writing Center Website, as well as coordinating with tech partners and researching new technologies to implement.

PROFICIENCY WITH TECHNOLOGY

- Dreamweaver,
- Adobe InDesign,
- Adobe Photoshop,
- HTML,
- CSS,
- Microsoft Office,
- Qualtrics,
- Nvivo.

COPYEDITING EXPERIENCE

Copyedited *Terrifying Transformations: An Anthology of Victorian Werewolf Fiction* (Valancourt Books, 2013) by Alexis Easley. University of St. Thomas.

Copyedited *Celebrity Culture, Gender, and the Victorian Author, 1850-1914* (Rosemont, 2011) by Alexis Easley. University of St. Thomas.

Copyedited and Indexed *The New India: Citizenship, Subjectivity, and Economic Liberalization* (Palgrave, 2011) by Kanishka Chowdhury. University of St. Thomas.

GRANTS

Competitive Grants

2015   Innovation Travel Grant for proposed presentation at the Great Plains Alliance for Computers and Writing Conference in St. Paul, MN.

2015   Purdue University Graduate Student Organization Grant to fund 2016 activities of Purdue's chapter of Rhetoric Society of America (RSA).

2014   Council of Writing Program Administrators Graduate Organization Travel Grant for proposed presentation at the CWPA Conference in Bloomington-Normal, IL.

2014   Professional Writing Showcase at Purdue - People's Choice Award for Professional Writing Project on Disability Maps in West Lafayette, IN.

2014   Purdue Graduate Student English Association Emerging Scholars Award for proposed presentation at the Midwest Association of Business Communication Conference in Minneapolis, MN.

2014   International Writing Across the Curriculum Registration Scholarship for proposed presentation at IWAC Conference in Minneapolis, MN.

2013   Purdue University Office of Student Engagement Service Learning Grant to fund community engagement project with the New Chauncey Neighborhood Association. West Lafayette, IN.

2012   Purdue University Office of Student Engagement Service Learning Grant to fund creation of technical documents for the Lilly Nature Center. West Lafayette, IN.

2012   American Studies Association Community Partnership Project Grant. West Lafayette, IN.

2012   Purdue University Office of Student Engagement Service Learning Grant to fund West Lafayette City Hall Archival resources. West Lafayette, IN.

2011   Saint Mary's University of Minnesota Hendrickson Leadership Grant for Writing Center to host Symposium on ESL Writing in Higher Education and invite Featured Speaker Dana Ferris.

2009   University of St. Thomas Diversity Grant for continued diversity research.

2008   University of St. Thomas Diversity Grant for continued diversity research.

Additional grants

2015   Computers and Writing/Graduate Research Network Travel Award to present at the 2015 Computers & Writing Conference in Menomonie, WI.

2015   Purdue English Department Graduate Student Travel Grant to attend and present at the Association of Teachers of Technical Writing in Tampa, FL.

2014   Society for Disability Studies Conference Travel Grant To present at the SDS Conference in Minneapolis, MN.

FELLOWSHIPS

Purdue Research Foundation Summer Fellowship, 2014.
Merit-based funding for dissertation development.

Purdue Doctoral Fellowship, Purdue University. 2011-2013.
Competitive two-year fellowship for students of diverse backgrounds, views, and experiences.

Advanced Opportunity Fellowship, University of Wisconsin – Madison. 2004
Competitive one-year fellowship for students for first-generation graduate students.

Hockenberry Summer Fellowship, Wabash College. 2003
Competitive summer fellowship for research and writing of proposed fiction project.

PROFESSIONAL AFFILIATIONS

- Association of Teachers of Technical Writing (ATTW)
- Conference on College Composition and Communication (CCCC)
- Council of Writing Program Administrators (CWPA)
- National Council of Teachers of English (NCTE)

WORKPLACE EXPERIENCE

- Mental Health Case Manager. Mental Health Resources, Inc. St. Paul, MN. 2008-2009.
- Academic Advisor. Walden University. Minneapolis, MN. 2007.
- Mental Health Counselor. Family Service. Madison, WI. 2005-2006

LANGUAGES

Fluent in English and Spanish.

RELEVANT COURSEWORK

Professional and Public Writing
- Professional Writing Theory
- Archival Theory and Practice
- Public Rhetorics
- Experiential Learning & Engagement Theory

Writing Program Administration
- Writing Curriculum Development
- Writing Program Administration
- Writing Program Assessment
- Emerging WPA Identities

Queer Rhetorics
- Narrative Theory and Postcolonial Texts
- Postcolonial Literature of the City
- Computers in Language and Rhetoric
- Public Rhetorics

PUBLICATIONS

PUBLICATIONS

Sanchez, F. (In Press). The roles of technical communication researchers in design scholarship. *Journal of Technical Writing and Communication.* 32 double-spaced manuscript pages.

Sanchez, F. & Nall, S. (In Press). Crossbreeding disciplines: Collaboratively developing a writing culture in Animal Sciences courses. In Alice Myatt and Lyneé Gaillet (Eds). *Writing programs, collaborations, and partnerships: Working across boundaries.* Palgrave MacMillan.

Unger, D. & Sanchez F. (2015). Locating Queer Rhetorics: Revealing local infrastructures through maps. *Computers and Composition 38*, 96-112.

Sanchez, F., Lane, L., & Carter, T. (2014). Engaging Writing about Writing theory and multimodal praxis: Remediating WaW for First Year Composition. *Composition Studies 42*(2), 118-146.

Sanchez, F. (2013). Creating accessible spaces for ESL students online. *WPA: Writing Program Administration 37*(1), 161-185.

Sanchez, F. (2012). Queer transgressions: Same-sex desire and transgendered representations in Aravind Adiga's *The White Tiger*. *Trans-scripts 2*, 176-190.