1-1-2012

Flickering cities: multimedia city fabrics and the changing nature of citizenship

Andrew Geddes Engel
Wayne State University,

FLICKERING CITIES: MULTIMEDIA CITY FABRICS AND THE CHANGING NATURE OF CITIZENSHIP

by

ANDREW ENGEL

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2012

MAJOR: ENGLISH

Approved by:

_____

Advisor Date

_____

_____

_____

_____

DEDICATION

For Brea

What follows is my first contribution to our commitment of
"fixing the engines of the world."

Your work is to discover your world and then
with all your heart give yourself to it.
— Buddha

ACKNOWLEDGEMENTS

I am deeply grateful to the following people. Without them and their support this project would not have been possible.

Richard Marback for being the best director I could have hoped for. He helped me to see the necessity of connecting academic work back to "real life," and I feel very fortunate to have had the opportunity to work with him.

Julie Thompson Klein for being a trusted advisor, confidant, and friend.

Chinmayi Kattemalavadi for being my constant companion during our graduate work. She has evolved into more of a big sister than a colleague.

Kim Lacey and Kay Stone for holding my hand through the finer details of this process.

Gay Lorberbaum for always playing the devil's advocate, and for giving me the opportunity to begin connecting my work in architecture with my work in rhetoric at an early stage in the process.

Carole Geddes-Engel for proofreading various chapters as deadlines approached and for encouraging balance in all things.

Sifu Brown for reminding me to breathe.

My wife, Brea Engel, for providing a supportive and fun environment in which to work and for being the reason I needed to keep going.

TABLE OF CONTENTS

Dedication ii

Acknowledgements iii

Introduction: The Post-Urban City 1

Chapter 1: Exploded Artifacts 30

Chapter 2: Collapsed Artifacts 61

Chapter 3: On-Demand Artifacts 100

Conclusion: Flickering Citizenships 134

References 148

Abstract 163

Autobiographical Statement 165

Introduction: The Post-Urban City

The Wilderness Downtown

Only in Marco Polo's accounts was Kublai Khan able
to discern, through the walls and towers destined
to crumble, the tracery of a pattern so subtle
it could escape the termites' gnawing.
— Italo Calvino

In late 2010 an experimental and interactive video entitled "The Wilderness Downtown" was released that incorporated a new web coding language (HTML5), programmers from Google, and a song from the band Arcade Fire entitled "We Used to Wait." When I link to the site I am asked to enter my home address in order to access the video. After I follow the prompts and hit "enter," the video plays and the music begins, and I see a young man running along a street and past houses that look very much like the street and houses outside my home. The "magic" happens when the programing running underneath the video takes my address and pulls images of my location from Google Maps and Google Street View, in real time, and inserts them into sequences of the pre-established, recorded video and audio elements. The result is a personalized video, constructed in real-time, which presents an experience that both augments and complicates my understanding of my home.[1] My home is "here," I'm sitting in it and typing, cooking, living, but my home is also "there," on the screen, and part of this video. It raises the question: what other versions of my house are there, and in what mediums? What is happening here, to my understanding of my own home when I consider that it exists not as a single artifact, but as something operating in multiple registers at the same

[1] Arcade Fire has since released another video for their song "Sprawl II" that uses viewers' webcams to control the speed of the video playback. As viewers dance to the music being played the people in the video dance as well. However, if viewers do not dance, the people either stand still or get stuck in a jerky set of movements like a stuck record. http://www.sprawl2.com/

time: the physical space of the city block, the personal space of my memories, and the digital space of the music video? How does such a multifaceted artifact square with how we typically understand the spaces of the cities in which we work, play, travel, shop, communicate, and live? As we examine such a common but unexpectedly complex artifact—where "home" is not just one thing in one place, but is scattered across the whole range of our spectrum of media—how does this enrich and challenge our perspectives of, and actions within, the fabric of the city? In other words, how does the prevalence of multimedia in cities today make us rethink the "where" of our spaces and their effects on us?

In *Invisible Cities,* Italo Calvino describes 55 cities that are some mixture of "real" and "imagined," although this distinction quickly loses its power as the narrative unfolds.[2] Of one city, Irene, Calvino writes:

> For those who pass it without entering, the city is one thing; it is another for those who are trapped by it and never leave. There is the city where you arrive for the first time; and there is another city which you leave never to return. Each deserves a different name; perhaps I have already spoken of Irene under other names; perhaps I have spoken only of Irene. (125)

One might argue that the complexity of a city can only be experienced or lived. We must walk down its streets, see its sights, and smells its smells. Only by doing so, we assume, can we understand its shape, the way it makes us feel, and the appeals it is making of us. But does the fact that Calvino's rich and dynamic urban hallucinations are rendered textually express, with any less potency, the quality "city"? Calvino's text is told in the form of the explorer, Marco Polo, narrating his experiences for the Emperor Kublai

[2] Recently one artist, Colleen Corradi Brannigan, has worked to physically construct all of the cities from Calvino's text (http://io9.com/5867012/artists-mission-is-to-depict-all-55-of-italo-calvinos-invisible-cities). Her creations can easily be seen as physical iterations that repeat and compliment Calvino's textual iterations.

Khan. Polo beautifully describes all of these cities—old and new, in the sky and underground, rich and poor, alive and dead—that are all, actually only one city, just different perspectives and different versions of it. The example of "The Wilderness Downtown" parallels Calvino's work from a multimedia perspective. We see strikingly similar conditions today where the people, buildings, and technologies that constitute our cities cannot be understood to possess only singular meanings because they are repeated and refigured in so many different contexts, media, and relationships *at the same time*. By entering our address into the video's engine we are engaging with different versions—different times, spaces, and media—from which to understand and describe our homes and their relationships to the larger communities and cities. Concurrent repetition of artifacts challenges and informs the appeals we have come to expect cities to make of us. How do we define, narrate, and engage with this type of city?

Spatial Rhetoric of the City

Robert Beauregard writes, "Urban decline exists because we have made it so" (243). What I take from Beauregard's point is that the languages we use to describe cities can unnecessarily limit how our cities' fabrics function and whether they succeed. The fabric of a city, as I am defining it, is made up of the relationships between images, objects, spaces, and agents that inform—either through persuasion, inspiration, or coercion—how we carry out our daily lives. There is a sense that we continue to feel unsure about how to take action in cities such as Detroit, Milwaukee, or St. Louis, where urban repopulation is taking place in many forms across many different types of media. This sense of unease comes from the fact that our descriptions of these cities do not

match the ways that we are using the elements of their changing fabrics. This mismatch arises when our actions demonstrate a presumption of seamlessness between media so that we move carelessly between physical buildings, social and augmented media, and reactive music just to name a few. And this type of movement is at odds with the persistence of medium-specific languages: talking about physical spaces with only the language of architects, or talking about digital media with only the language of programmers. Gunther Kress and Theo van Leeuwen refer to this condition as "monomodal," which they describe as:

> [O]ne language to speak about language (linguistics), another to speak about art (art history), yet another to speak about music (musicology), and so on, each with its own methods, its own assumptions, its own technical vocabulary, its own strengths and its own blind spots. (1)

If we persist in the notion that our spaces must first be *physically* rejuvenated, reclaimed, or re-appropriated before they can be re-inhabited, then we assume that spatial failure and any spatial answers are tied exclusively to physical media. Likewise, if we assume that digital protocols and operations function only virtually and can be made distinct from the physical world, then we have persisted in keeping separate media that contribute to and play off of one another in our daily encounters. The privileging of medium-specific languages needs to be abandoned because it predetermines the social actions—the perspectives, questions, and narratives—that can be generated within the multimedia fabric of today's cities. This project addresses the mismatch between our actions in cities and the languages we use to describe them. I show that to be responsible citizens who make the most informed choices, we must first reconnect what we are saying with what we are doing in the diverse but intertwined media of our cityscapes.

Today's cities are commonly defined as hybrid, blended, or cybercities. Tracing out the rhetorical affordances of cities is particularly challenging given the assumptions about easy transitions between media and the lack of critical approaches to these transitions. Post-industrial conditions are all too common today where recent efforts for re-habitation, combined with developments in digital communication technologies, have dramatically re-imagined and redefined what we understand the city to be, how it functions, and how it affects our actions. Gerard A. Hauser writes that rhetoric "is concerned with the use of symbols to induce social action" (3). In rhetorical theory, the use of these symbols involves learning how to make the most persuasive argument at the appropriate time and in the appropriate place. However, a definition of rhetoric that is predicated on the use of symbols does not adequately help us to deal with the ways spaces affect our capacity for social action. By extending Hauser's definition to include the communicative and persuasive potential of spatial media, this project will define "spatial rhetoric" as, "the way the artifacts of the city fabric (images, objects, and spaces) inform, either through persuasion, inspiration, or coercion, how we carry out our daily lives."

I am using spatial rhetoric to foreground the discussion of the persuasive nature of cities herein because my goal is to bridge our medium-specific discourses with our assumptions about their interchangeability by tracing out differently mediated versions of artifacts. Previous approaches to this mismatch between words and actions have typically gone too far to the extremes. On the one hand, one approach situates a single context in the city, which tends to ignore other similar contexts and cannot speak to the city as a whole. Or, on the other hand, the second common approach uses the mobility that media

provides to data and communication to say that the city is everywhere. And yet, this approach is too broad and does not account for the differences in media, the conflicts that arise when they interact, and the different ways they appeal to us both separately and in combination. In response to these approaches, what follows will be similar to Calvino's multiple perspectives on Irene by demonstrating a new approach to the multiple and multimedia perspectives of our cities and the effects they have on us.

The situated approach to cities comes from the material traditions that are grounded in the second half of the 20th century, and particularly in the decades following World War II. Describing the keyword "city," Raymond Williams writes:

> *Civitas* as the general noun derived from *civis*, L – citizen, which is nearer our modern sense of a 'national'. *Civitas* was then the body of citizens rather than a particular settlement or type of settlement. (56)

Williams was writing in the late 1970s and early to middle 1980s, and his recounting of the development of the word "city" shows that historically the term was positioned against some other space or practice: for example, urban/rural or inner-city/suburb. The great surge of suburban development following WWII actually weakened this binary structure where the city, once full of people and commerce became defined by its lack of these same things. Elizabeth Wilson writes, "For [Lewis] Mumford the city was a container." She continues:

> [T]hat is to say it was and had to be a finite space. He believed that the 'sprawling giantism' of the twentieth-century city was leading inexorably to megalopolis and thence to necropolis, the death of the city. The sharp division between country and city no longer exists, he wrote. The original container has entirely disappeared" (147).

For Mumford, there was a shapeless quality to post-war cities as the suburban sprawl of the 1950s and 1960s began to take hold. These sorts of modernist divisions and

narratives—the city vs. the country, the urban vs. the rural—began to dramatically change with the steady erosion of the city as a material and rhetorical place while the suburbs were understood to be consuming and diluting all that existed before them. Now socially and economically poorer, it was the physical dissolution of the city that altered its ability to contribute to the function of communities, which before had previously been based on the status of the city as separate and distinct from other types of spaces.

Somewhat unfortunately, Mumford's assertion that cities had once been containers has had a resurgence in the "spatial turn" that social theory has taken in recently years. For example, David Fleming discusses the ways that spatial situations affect our capacity to act rhetorically and create social action. Connecting dynamic public space and active political discourse, Fleming revives the connections between rhetorical practice and physical space that were developed by the ancient Greeks. The limitation of Fleming's approach, however, is his insistence on stability rather than mobility—the latter is a persistent thread in discussions about communication technologies that developed in the last two decades of the 20th century, which today have come to define the city as almost synonymous with mobility (Urry, Augé). Fleming argues that social/political/democratic action can only take place through physical proximity. By extension, since social action can only happen in one type of relationship (within physical space), then it can only happen in one way because it is constrained by its material assumptions. This privileging of the physical emphasizes embodied practices that work in tandem with the affordances of our physical spaces. So for Fleming, the possibility for rhetorical (and here read political) situations are intimately linked to city spaces, which are equally threatened by populations moving from cities to suburbs, the rise of varying

types of digital communication technologies, and the emphasis on the individual in the West at the expense of the group or the community.

The situated approach to the city that Flemings argues for has connections to rhetorical theory's recent past and Lloyd Bitzer's seminal essay entitled, "The Rhetorical Situation." Bitzer begins with a very simple but foundational question:

> If someone says, That is a dangerous situation, his words suggest the presence of events, persons, or objects which threaten him, someone else, or something of value. If someone remarks, I find myself in an embarrassing situation, again the statement implies certain situational characteristics. If someone remarks that he found himself in an ethical situation, we understand that he probably either contemplated or made some choice of action from a sense of duty or obligation or with a view to the Good. In other words, there are circumstances of this or that kind of structure which are recognized as ethical, dangerous, or embarrassing. What characteristics, then, are implied when one refers to "the rhetorical situation"—the context in which speakers or writers create rhetorical discourse? (1)

Bitzer's aim was to identify the elements that characterize rhetorical exchange, and to understand rhetoric from a situated or a context-specific perspective. His argument was a reaction to the rather limited scope of rhetoric at the time, which was focused almost exclusively on the orator (author) of a discourse (2). In order to answer his initial question of how we come to understand a situation as "rhetorical," he lists three constituents: exigence (the problem that is addressable through discourse), the audience (the actor(s) that will take action as a result of the discourse), and the constraints (the limitations that the situation establishes) (6-7). At the time, this work had profound effects on rhetorical theory, and my reasoning for returning to Bitzer as a starting point for a discussion about the rhetorical affordances of cities is that a common response to an artifact is to situate and contextualize it as a first step in understand it.

Interestingly, when Bitzer lays out his list of constituents for a rhetorical situation, the "author" is conspicuous in its absence. While this was likely a response to the overabundant focus on the author at the time that Bitzer was writing, he was criticized for leaving out this element. Richard Vatz writes:

> If, on the other hand, you view meaning as a consequence of rhetorical creation, your paramount concern will be how and by whom symbols create the reality to which people react. In a world of inexhaustible and ambiguous events, facts, images, and symbols, the rhetorician can best account for choices of situations, the evocative symbols, and the forms and media which transmit these translations of meaning. (158)

Vatz's argument, which is a response to Bitzer, is to re-inscribe agency within the rhetorical situation where the generative thrust of a rhetorical situation is a matter of the author's choosing (158). Or, as Keith Grant-Davie puts it, "Vatz argues that rhetors not only answer the question, they also ask it" (265). Positioned as a sort of rhetorical chicken-and-egg game, Bitzer claims that it is the rhetorical situation that generates the capacity for rhetorical discourse, whereas Vatz sees the rhetorical situation (and its constituent elements) as something that is chosen by the rhetor.

Arthur B. Miller takes the rhetor/rhetorical situation debate a step further and argues that neither Bitzer's nor Vatz's arguments are complete without the other. Miller writes:

> When a *speaker's* constraints combine with his perception of an action, phenomenon, or fact, the result is the speaker's perceived exigence. This perception becomes the basis of the speaker's *intentions* toward his hearers as revealed in his speech to them. On the other hand, when a *hearer's* constraints combine with his perceptions of actions, phenomena, or facts, the result is the hearer's perceived exigence: the basis of his *expectations* as he listens to the speaker. (117)

Vatz charges that this notion of situated-ness amounts to little more than the perspective of the observer. In Vatz's estimation, Bitzer's identification of meaning of a "rhetorical

situation" is more of an essentialist view of certain situational elements. In other words, these elements have some inherent or intrinsic rhetoric-ness about them (155). Bitzer later tried to defend against this essentialism by arguing for a constellation of constituents, of situational characteristics that delineate and define a given type of situation. Given the introduction of new media, authors, audiences, communities, and constraints of today's cities, how might Bitzer's understanding of rhetorical constituents be extended? How might we begin to think across different situations? If, following from his examples, we have multiple situations—dangerous, ethical, rhetorical, etc.—occurring around the same artifact—at the same time but in different media and spaces—how are we to make sense of them? If situations are overlapping and intermingling, how realistic is it to think that we can separate them so neatly?

Similar to Bitzer's question from almost 50 years ago, how do we identify, act in, and make sense of the situations that are arising in urban environments in the second decade of the 21st century? "Today," writes Wilson, "the public/private dichotomy can't quite adequately express the full complexity of contemporary urban space and our experience of living in it" (159). Within urban environments there are many different and distinguishable situations at work. Spatial affordances inform our ability to interact with other agents, and our spaces are equally influenced by these interactions in turn. Likewise, Johnathon Mauk argues:

> [T]o understand the problems and nuances of any set of practices, as they are acted out by a particular group of people, we must have some intellectual tools for understanding the spatial-social complexities of those practices—for understanding how material existence and geopolitical location figure into knowing and acting. (210)

But the situated approach has profound limitations for dealing with the post-industrial cities of the American rustbelt: Detroit, Milwaukee, St. Louis, etc. These cities were once the centers of manufacturing practices and possessed the bustling liveness of the face-to-face and physical model of the urban city based on *situated proximity*. The introduction of global manufacturing practices changed this model and the physical proximity of the city, its most essential trait, became less and less necessary. The rhetorical qualities of these city spaces began to lose their ability to inform (some combination of persuasion, inspiration, and coercion) how we live. In short, we no longer felt that we needed the constraints of the physical city. Using situation-specific languages and methods is as limiting a practice as using discipline-specific languages because they cannot adequately account for the different situations that are constantly interacting in an urban context.

By the middle-to-late 1990s many of these hard and fast separations between the physical and the digital began to break down. The notion of proximity and the rhetorical qualities of the situated city were further threatened by the introduction of digital and high-speed communication technologies. With the wide proliferation of digital communication technologies starting in the early 1980s with the introduction of the personal computer and later the Internet, the "city/fill-in-the-blank" binary transitioned to a material focus with the rise of physical/digital communication as well as physical/digital transportation of goods and information. With the rise of the information economy, technologies have become interwoven into city life to the point that they now erase, extend, and compliment the physical fabric. In the beginning, many saw this as a challenge to the basic assumption about the materiality of city spaces based on the idea of physical containment: artifacts were understood to be contained in one medium or

another, physical *or* digital, but not both. Until relatively recently (the 1980s and 1990s), these binary distinctions had largely persisted not just in popular culture but also in academia and professional disciplines (Graham 1). "[I]f, in the 1980s," writes Michael Ostwald, "virtual technologies had been linked to the breakdown in community and, through this connection, to the destruction of urban form, in the 1990s they were seen as the saviour of community life" (659). In other words, the dream of the 1980s and 1990s was to create an informational system—cyberspace—with a distributed nature, distinct from the physical urban centers, that allowed globally-distributed collectives of individuals new forms of movement, access, and identification that were not possible in the bounded, physical space of urban cities. The tensions that arose from these binaries created an "other" against which to measure the city, but also raised fears that suburban and virtual ways of life would ultimately dissolve or further "dematerialize" our relation to the (physical) city (Graham 6). Indeed, as David Bell notes, the "consensual hallucination" of "cyberspace," which arose in no small part thanks to author William Gibson, was predicated on networked connections where the goal was to decentralize knowledge as a means of protecting it (2). This consensual understanding of cyberspace recalls Raymond Williams's discussion about the early definition of the term city as a collective body rather than a specific setting.

Being able to do business and create relationships across the globe meant that our understanding of "cities" took on a very expansive and digital nature. With this shift, the rhetoric of the digital, global city came to inform how we lived and worked and how we defined our communities and ourselves. In short, it changed the very fabric that defines what the city is. One major distinction between physical and digital spaces is that

physical spaces have traditionally been described as "dumb," which means that they cannot react to their users, who are again positioned as the sole agents in the relationship. More recently, a shift from "dumb" to "smart" devices is evidence of the changing conceptualizations of technology today as they become increasingly interwoven into our spaces:

> They are primarily *communication* devices—not dumb ones like telephones handsets, that merely encode and decode electronic information, but smart ones that can organize, interpret, filter, and present vast amounts of information. Their real role is to construct cyberspace—a new kind of place for human interactions and transactions. (Mitchell 109)

And yet, there is still an identifiable fabric to the spatial interactions we were having online. We did, and still do, conduct business in time zones other than our own, which changes our very basic patterns of eating and sleeping. We carry out non-present relationships with people on the other side of the world and this, too, changes our emotional patterns of living.

With W.J.T. Mitchell's shift from *containment* to *communication* comes the presumption of speed. For Deyan Sudjic, we are now moving through physical space at the speed of digital communications. He writes:

> This new species of city is not an accretion of streets and squares that can be comprehended by the pedestrian, but instead manifests its shape from, the air, the car or the mass transit railway. Landmarks are reduced to flashes of slow-moving traffic, glimpsed from above on elevated highways amid a glittering river of red brake lights, or famous place names translated into the illuminated station signs that punctuate the darkness of metro tunnels. (Sudjic qtd in Amin and Thrift 3)

This increase in speed, however, does not have to mean a substituting of the digital city for the physical city. The goal for some is not to simply replace one situation and its characteristics with another, but to see how they can inform one another. Jane

McGonigal's new book, *Reality is Broken*, and Edward Castronova's *Exodus to the Virtual World*, are examples of texts that present arguments about how spaces, practices, and expectations of the digital world can be used to "improve" and even "fix" the physical world. To a limited degree, I agree with their arguments. Certainly, the current state of contemporary cities does not provide adequate spatial suggestions for how to act because the languages necessary to respond to differently mediated situations are not yet built into the program of physical city spaces. The method by which we incorporate new characteristics into a situation needs to be examined and rethought. McGonigal and Castronova both insist upon a one-way directionality where physical media are taking on qualities of digital media. This, however, is where my agreement with McGonigal and Castronova ends. I am interested in exploring the bi-directionality between situations where indeed the digital can and does influence the physical, but at the same time the physical media of cities are influencing the digital media of cities, a form of "remediation" at the scales of both the city and the individual.

Richard Skeates notes that the breakdown of old spatial distinctions (e.g. city/country) required a reevaluation of the concepts and practices of the city:

> We can no longer use the term city…in the way it has been used to describe an entity which, however, big and bloated, is still recognizable as a limited and bounded structure which occupies a specific space. (Skeates in Graham 114)

The binaristic visions that surfaced in the middle of the 20th century have since been discarded as hyperbolic for their conceptual separation of "the city of bits and the city of atoms" (Graham 9). Stephen Graham writes:

> Against the widespread assumption between the 1960s and late 1990s that electronic communications would necessarily work to *undermine* the large

> metropolitan region, all evidence suggests that the two are actually supporting each other. (1)

The evidence that the affordances of these two systems are mutually supportive can be seen, for example, in the overlaps and intersections of communication and transportation infrastructures from real-time traffic info on highway billboards to social networks that alert college students about a campus closure because of weather. These complementary systems described by Graham suggest a breakdown of the physical *or* digital binary. The antagonistic relationship between cities and cyberspaces of the late 20th century has given way to a hybridized and post-modern version of the city in the early 21st. Such a city is not a singular set of qualities or a bounded space; it is a dynamic collection of relationships between agents and information that move (the keyword here) across what Bruno Latour calls the "enormously varied 'skein of networks'" (Latour in Graham 69).

The postmodern approach to city-spaces, found in the works of Leonie Sandercock and Edward Soja, weds, merges, and hybridizes physical and digital media such that they sidestep the physical/digital binary by creating an "other" type of space that is a combination of the two. For example, Soja favors the radicalizing or hybridized perspective when he is reacting to the polarized and binary choices we are presented with in the form of debates about modernism/postmodernism and the like (5). In this way, Soja's thirdspace is a radical space that suggests a radical type of habitation:

> [A]n effective invitation to enter a space of extraordinary openness, a place of critical exchange where the geographical imagination can be expanded to encompass a multiplicity of perspectives that have heretofore been considered by the epistemological referees to be incompatible, uncombinable. (5)

These "radical" or "other-than" practices rely not on the spatial determinism found in Fleming (although he does claim that "physical marginalization is both cause and effect

of social, economic, and political marginalization" (189)). Instead, the radical nature of the hybrid model of cities argues for an othering of the practices of a city's inhabitants and this othering in turn exposes new spatial affordances when rhetorical practices, spheres of labor, and even subjectivities collide. But how do we live in a space of collision? From where are we to draw inspiration for our actions? Is there another approach to the rhetorical qualities of cities that can help us understand more concretely what the city is asking of us and how to respond?

Iterative Spaces: The Post-Urban City

Ash Amin and Nigel Thrift write, "We can no longer even agree on what counts as a city" (1). Although we can begin to see the potential and the necessity for new city languages in artifacts such as "The Wilderness Downtown," we still struggle to describe and really interact with something that is anchored simultaneously in the different positions and expectations of personal and collective memory, as well as physical and digital media. By identifying instances where artifacts repeat, we can see how each iteration of "home" possesses different capacities for practical social action and expression, not just the tension of otherness, as the artifact itself begins to "flicker" across its various languages, contexts, and communities. Simply put, *flickering* occurs when artifacts are repeated concurrently in different media and when we move between these repetitions. The movement between versions of an artifact is based on N. Katherine Hayles's description of "flickering signifiers." She writes:

> Foregrounding pattern and randomness, information technologies operate within a realm in which the signifier is opened to a rich internal play of difference. In informatics, the signifier can no longer be understood as a

> single marker, for example an ink mark on a page. Rather it exists as a flexible chain of markers bound together by the relevant codes. (31)

Hayles's "internal play of difference" is exactly what we are seeing with the multimedia artifacts of today's city fabrics, which do not (and cannot) have singular meanings precisely because they are repeated and refigured in so many different media spaces and relationships. The concept of "flickering cities," therefore, acknowledges a similar point where "the signifier can no longer be understood as a single marker." Post-industrial cities provide the best opportunity to explore new ways of reconnecting how we act in and talk about our environments. The physical structures of these cities are in such a de-privileged state that we can more easily explore how a multimedia fabric contributes to the ways we understand, evaluate, narrate, and use these cities differently. It is important that we examine such languages today because as city fabrics are being repopulated and rebuilt, so too are they being re-imagined and redefined.

The "internal play of difference" found in flickering cities is the result of elements of "the city" being found in so many different media. This expansion of where the city "is" means a de-privileging of physical media as our "benchmark" thereby challenging the claim that the physical, urban city is "the original city." Similarly, David Kolb pushes against our assumptions about the traditional functions and operations of physical spaces: "Urban theorists should understand [spaces'] new modes of unity and connection, and not hasten to measure them by old examples" (2). Kolb's call for new ways to "measure" the city has the potential to be a very productive experience; however, this means rethinking how physical and digital spaces work together to form the city, but now from a practical perspective that can be readily lived and experienced (Chaplin and Holding 124). By working to account for the intricacies (affordances and constraints) of the ways different

media interact we can then see how the "city" reemerges with new rhetorical qualities based on our new understanding of the construction of its fabric. For example, traditional urban planning discourse tells us that once a house is razed for a high-rise or a park is paved over for a freeway, there is little we can do to recall let alone revisit the site. The iterative qualities of today's city artifacts, what I am calling generally "flickering artifacts," demonstrate a type of preservation that does not necessarily forestall or prevent such a loss, but lessens its blow by recognizing that no space or object is entirely singular or completely erasable from all media. As artifacts flicker, they resist attempts to precisely pin down what they are, and at the same time they are also setting the stage for a new condition of cities.

When we consider the multimedia richness of our cities, how do we make sense of the relationship between their physical and digital media and the constituents of each? The present physical discourse about city spaces has not remained current and does not address or incorporate the evolving natures of these agents (citizens and post-humans, and technological devices and media forms) or the practices of habitation and communication in these spaces. For some, this mixture of different spaces and forms of mediated communication leads to an over-exaggeration of the collision between media in the city where all are struggling to find a foothold. Douglas Kelbaugh describes this type of approach as "post urban," when he writes: "the most heterotopian and least idealistic of the three paradigms," with the other two being Everyday and New Urbanist perspectives on the city" (9). He continues:

> In some sense, it is anti-urban, just as postmodernism was anti-Modern…Like Modernism, its design language is abstract, with little or no overt reference to surrounding physical or historical context. It is more

> beholden to non-local, exogenous forces, such as international finance, banking, corporate branding and politics. (10)

Unfortunately, such a reading of the post-urban is so focused on the city-of-abstraction and the sway of global commercial powers that its capacity for productive use by an individual or group in the city itself is severely limited.

And yet this concept of the post-urban has potential. How, then, do we reengage with the post-urban as a productive way not just for describing or defining the conditions in cities, but as a way by which we can effectively engage and analyze our interactions in these cities as well? I argue for a reading of the post-urban that is similar to other scholarship on the posts- (post-feminism, post-theory, etc.). Similarly, Sarah Chaplin and Eric Holding write:

> The post-urban is not…a synonym for the post-industrial or the post-modern…It is the outcome of the combined effect produced by such forces of change as gentrification, globalization, multiculturalism, cosmopolitanism, and post-Fordism. (123)

The post-urban is similar to other post-theory scholarship in that it does not come after the urban (a move cyberutopians have argued for), nor is it positioned stridently against the urban (a move that would simply reinstate something similar to the urban/rural binary). Instead, the post-urban is the next evolution of cities, a condition that develops from, expands upon, and extends the spatial languages, practices, and fabrics of the urban in other media, ones that we traditionally might not associate with contributing to the city and its impacts on us. The post-urban describes a self-awareness that "occurs whenever there is a conscious reinvestment if not in the city per se, then in some reified version of 'citiness'" (Chaplin and Holding 123). The repetition and simultaneity of artifacts in different media is crucial for how I am defining the post-urban, and it is where my

definition diverges from that of Chaplin and Holding. The aim throughout this project is to examine and trace out the next evolution of the urban, a condition that develops from, expands upon, and extends the conditions and practices of the urban.

The shift from the urban fabric to the post-urban fabric comes from the *repetition* of city constituents in the registers of other media as with saw with the video example, "A Wilderness Downtown." To be sure, the physicality of a city space is never duplicated, and we still have physical bodies with physical needs. But such an emphasis on the physicality of cities must be acknowledged as such—the physical is only one medium, one mode, out of many by which we can *express* the city. Unpacking this manner of expression shifts our understanding of the post-urban from one of over-exaggerated media gluttony as described by Kelbaugh, to a perspective that acknowledges and takes advantage of a middle ground between the diffusing of global circulation of goods and information and the renewed emphasis on local materiality in the face of rampant digitization. An artifact such as "The Wilderness Downtown" is both a collective and personal experience for all users that begins when they first enter their home addresses. The iterations of "home" serve as concrete examples of the shift from an urban fabric focused primarily on physical media and singular artifacts to a post-urban city fabric that can better account for an expanded definition of "citiness" when different media interact. Therefore, if as Beauregard states, "urban decline exists because we have made it so," then by the same logic, such a post-urban rebirth of cities is similarly within our reach and what's more, it is our responsibility.

It is crucial that we work to make this change happen because the distressed and confused condition that is taking place in post-industrial cities affects the narratives we

can create about ourselves as well. When we embrace the flickering quality of contemporary cities, we are able to be good citizens, which means choosing how we will belong to spaces purposefully and responsibly. Being a citizen today amounts to negotiating between the different iterations of an artifact, a reflective process of choosing between the different communities, spaces, and sets of relationships of each iteration, each flicker. Putting iterations into conversation with one another does not assume that we will arrive at a totalized or complete understanding of an artifact. Through our negotiations we are acknowledging the spaces and communities that we are choosing to ignore, out of necessity, as we are working to describe and engage with the elements that are most relevant to us. Yet, because of their multimedia nature, if we fail to recognize the different persuasive potentials of today's cities, then we are in danger of being exploited by the people, objects, spaces, and devices around us because we are not capable of dealing with our place in these new relationships and their effects on us. Therefore, tracing out the ways we talk about and move through the flickering media of today's cities is crucial for every citizen and means accounting for the different versions, the different *iterations* of these cities. To this end, outlining a framework—a series of iterative approaches that readers can use as they engage their own flickering artifacts—will be the work of this project.

Project Structure

This project takes advantage of the multiple media of cities' flickering artifacts and uses them as the structure to argue that the post-urban condition has gone under-theorized in its capacity to be a functional concept for how the city works and is

structured today. John Muckelbauer writes: "[I]f we cannot avoid repetition, everything hinges on *how* we repeat, on the inclination within any particular encounter, and on how we modulate the rhythm of repetition" (36). To this end, I argue for an *iterative approach*: one that examines how, within the post-urban, there are no singularly-mediated artifacts. This approach thrives on how post-urban artifacts are amalgamations of the different ways they are seen, and experienced, across the media spectrum. The iterative quality of the post-urban city, with its rich and reckless mixture of physical and digital media, its (non)human actors, and its different kinds and degrees of spatial relations, has three major themes:

1. ***There is no original.*** In the post-urban, we need to let go of the hierarchical predisposition for temporal ordering and the privileging of particular media. Steve Shaviro describes the iconic nature of celebrity as an iteration when he writes: "I say *iteration*, rather than *version,* or *copy,* because there is no original, or Platonic ideal, of a celebrity: all instances are generated throughout the same processes of composition and modulation, and therefore any instance is as valid (or 'authentic') as any other" (18). Without this obsession for asking "which came first," we can begin to explore how different iterations influence each other regardless of when they were created or in which medium.
2. ***Singular approaches no longer work: a situated approach is too limited, a global approach is too broad.*** Iterative approaches work against an insistence on situational logics that confine our examination to a single set of conditions. If our contextual focus is too narrow we will not be able to

account for other situations comprised of comparable but not identical elements. Equally, if we overgeneralize about artifacts' implications then we run the risk of missing the details in an effort for some large "theory of everything." Instead, an iterative perspective provides a middle ground of examining the relationships between different situations that have similar elements. This approach allows us to see the similarities and differences across artifacts' multiple ecologies and explore the affects they have on us.

3. ***Constantly amending and adding versions.*** Iteration is not about getting things "right." The inherent and necessary repeatability of iterations means that we are constantly tweaking and adjusting our versions of a given artifact, context, or encounter. The post-urban condition compliments rhetoric's commitment to "the faculty of observing in any given case the available means of persuasion" (Aristotle 6). Through iteration we recognize not only the multiplicity of "the best" but also the fact that the best changes based on which iterations of an artifact we choose to consider. Rhetoric is about exploring and developing the interactions between authors and audiences, between architects and inhabitants, and between designers and users. Rhetoric is also the frame by which we can gauge these communications and to do so we must also extend its qualities to accommodate the changing and expanding shape of the interactions we have in today's cities.

The previous models of the city are still visible in the artifacts and fabrics of our cities, and by identifying instances of iteration in them we can better see how reworking these

models redefines our roles in city fabrics. In developing the structure for this project, each chapter presents a different perspective on the relationship between the physical and digital media in our cities by taking up a different artifact with its own unique qualities. In exploring these artifacts, I will discuss how each leads to particular assumptions about the city, how the relationships of these artifacts appeal to us and ask for particular actions, and how their relationships help us to develop new modes for describing our participation in cities.

Chapter 1: Exploded Artifacts examines the situated, urban city. In this chapter, I critique a piece of graffiti that appeared in Detroit in the summer of 2010. Here the artifact is "exploded" as its different versions are created and distributed across three different media spaces: an architectural/industrial space, an art gallery, and the web. Appreciating the richness of this artifact and its journey requires that we hold together (in conversation) these different iterations because each one gives us new and different perspectives on the communities, relationships, and methods of meaning for this artifact. Exploded artifacts demonstrate a sense of *diffusion* about the city that the post-urban addresses by drawing back together different iterations that help to make sense of their potential conflicts and compliments as they relate to our understanding of the artifact's meaning. The drawn together nature of these artifacts demonstrate a rise in contingency, or an increase in the futurity or potential for later iterations that extend and contribute to the artifact as a whole.

Chapter 2: Collapsed Artifacts takes up the hybridized and post-modern city by examining *Photosynth*, a tool for digitally stitching together photographs and producing a 3D point-cloud model the viewer can walk-through and tag with metadata. The artifact in

question is a representation of Notre Dame cathedral, which actually consists of thousands of photographs of varying quality that have been collected from across the Internet. Each image or set of images represents one individual's experience and engagement with the space. Once "synthed," however, each experience is collapsed into what appears to be a "complete" artifact that presents a clinging to constancy about the experiences of this artifact regardless of their medium of engagement. Therefore, in order to get at these individual experiences, this totalized artifact needs to be pulled apart to have its separate iterations exposed. Collapsed artifacts demonstrate a *depth*—of meaning, information, and experience—across multiple media that appear, at first glance, to be seamless and complete. The Notre Dame artifact takes on the quality of an intricate knot, and the goal of this chapter is to work at pulling at the different strands, making gaps, and allowing the unique affordances of each media to become visible and available for critique. While the goal may not be to unravel the knot—indeed, it probably is not possible—the goal is the loosen it enough to be able to see how these versions have been sutured together and how their media are working together, and more importantly, how their individual qualities are affecting us.

Chapter 3: On-Demand Artifacts traces what I am calling the real-time city by exploring 3D printing technology, which uses an additive layering process to create a three-dimensional object from a computer model. 3D printing seems to offer the potential for perfecting quick and individually customized objects, which would further exacerbate the already strained relationship between demand, production, consumption, and mobility in cities. As a means of tempering the assumptions that this technology's output fits a demand with little or no intervention from the user, I use the do-it-yourself (DIY) culture

as a frame. DIY is a common approach to the repopulating and redefining of many contemporary communities, and it emphasizes the role that the design process plays in creating objects that work well for the designers/users. An iterative approach reinforces the necessity for reflective practice to understand how knowledge and expertise are generated across multiple media. Further, on-demand artifacts demonstrate the rhetorical usefulness of imperfection and the desire and need to continue reworking one's relationship with an artifact. Since the iterations of these artifacts are designed, altered, and manufactured in open-source ways—through inexpensive hardware, often free software, and extensive communities both on- and offline—they demonstrate a shift from persuasion to inspiration as the force that drives people to print, make, customize, and participate in the post-urban city.

Conclusion: Flickering Citizenships is a discussion about how the definition of responsible participation today is greatly influenced by the iterations of the artifacts we encounter. In this conclusion, I will lay out the different citizenships that arise out of the three types of post-urban artifacts I have previously discussed. Mapping onto the chapter topics above, these iteration/citizenship pairings are as follows: exploded/compiled, collapsed/obsolescent, and on-demand/disposable. From these examples we can begin to see the post-urban condition in our daily lives and start to work through what it means to participate in the experiences that it affords us. Today, citizenship itself is also iterative and which version of citizenship is asked of us depends on the artifacts with which we choose to engage. That said, these three artifacts and their corresponding citizenships do not in any way exhaust the possibilities of the post-urban city. There are many more, and

the discussion here is meant to serve as a framework for readers as they begin to identify and explore the other artifacts and citizenships that arise as the post-urban city matures.

Challenge

As you read this work, I encourage you to be mindful of how you are moving through the fabric of your city. With this discussion of flickering cities in mind, I challenge you to examine, from two perspectives, the objects and spaces you interact with most on a daily basis. *First, **reflect** on the spaces that you are moving through as you go to your home, office, car, a social media site, or your email inbox. How do you describe these spaces? What clues do they give you for how to act in them? Where do you see moments of repetition: perhaps in the communities you participate in online and face-to-face, or in the spaces you move through both digitally and physically? My second challenge to you is to consider what you have **produced** or **contributed** to your environments recently. How do your descriptions of your spaces match up with the ways that you use them? How have you adapted these spaces to better fit your needs? What sort of trial and error processes did you go though before they felt "right"?*

Reflection

Failing to be critical of the ways different media are coming together means that we are in danger of being exploited by the people, objects, spaces, and devices around us. For example, it would be easy to assume that certain qualities of the media in "The Wilderness Downtown" are interchangeable. But to do so would mean that we have been fooled into thinking that one type of media, one type of space, can substitute for another, or that physical and digital spaces will work harmoniously if we just mash them together.

If we do not actively work to question how different iterations are at best persuading, and at worst manipulating our actions, then we are carrying out our daily lives with a diminished understanding of *why* we are acting in particular ways. Just as "The Wilderness Downtown" flickers or repeats in multiple media at the same time, our participation in its different iterations, and our reflection on that participation, means that citizenship itself is now iterative. The relationships that we construct with material artifacts are malleable, and flex to accommodate our changing needs. We take on different roles and develop different definitions of citizenship as we go about our days and interact with different objects, spaces, and agents. When engaging with flickering artifacts, we must decide to let go of the presumption that media are seamless when we use them but distinct when we talk about them, and work to see how our languages inform our actions and vice versa.

Production

In the first challenge I asked you to reflect on the different media and spaces with which you interact. In the second challenge I asked you to consider how you contribute to the shaping of your environment. My own engagement with each of the chapters' artifacts illustrates three opportunities for how we might be productive in the post-urban city. The writings I have done serve as additional iteration of these artifacts that bring the communities and arguments of textual space into conversation with their various media spaces. But this process of productive iteration is not a one-time operation. Once we begin creating iterations, we are responsible for the effects of the ideas, objects, and relationships that we put out into the world. The productive process of iteration is intimately wedded to the reflective process of iteration that I described above. And, we

must continually reassess our designs and redesigns to test if they are still appropriate for their situations, and to see how they might be impacting other people, objects, and spaces.

To be productive with flickering artifacts means first understanding that objects and spaces can be "inoperative" in two ways, and that we are all fully capable of dealing with both. On the one hand, inoperative can mean a physical or mechanical failure of an object or space. On the other hand, inoperative can also mean that the design of an object or space does not correctly conform to how I want to use it, and in this case it would be how I want to participate in the city. The tacit knowledge we have developed from using objects and spaces all of our lives give us the intuition, expectations, and skills to begin changing our environments to better suit our needs. To understand the city as a problem of rhetoric and of design takes advantage of the flickering quality of its multimedia fabric. Such an understanding means seeing the new relationships created across media as ways of extending the space and time of the city in a manner never before possible. Engaging with iterations is an active and productive process of putting artifacts and arguments out into the world, testing their usefulness and appropriateness, and redesigning them as necessary.

In sum, your participation in cities today is about being mindful of, and proactive in, the different iterations you participate with in your environment. By recognizing the changing and increasingly repetitious nature of our cities, we can refuse to uncritically accept the divorce between the ways we talk about and the ways we move through the multimedia fabric of our cityscapes. By working to connect our voices and our actions, we can better understand the roles that we must play in our flickering cities.

Chapter 1: Exploded Artifacts

Exploded Artifact: Banksy's "I Remember"

"A wall is a very big weapon. It's one of the nastiest things you can hit someone with."
— Banksy

In the summer of 2010 the street artist Banksy created a piece of graffiti at the old Packard Plant, a long-defunct automobile factory, in Detroit. It shows a young person holding a can of paint and a brush and standing next to the phrase, "I remember when all this was trees."[3] It is common for Banksy to use his art and its locations as catalysts for discussions, and he insists that the conversations around his pieces are as integral to his art as the paint he uses:

> I've learnt from experience that a painting isn't finished when you put down your brush–that's when it starts. The public reaction is what supplies meaning and value. Art comes alive in the arguments you have about it. (Banksy, Interview)

Art, for Banksy, is not static. Instead, meaning and value come out of what we choose to do with of his work, what we say about it, and where we find it. With this in mind, "I Remember" seems like the perfect commentary to appear in Detroit, the archetypal example of the failure of industrialism, and helps to reinforce narratives about the death of the city. This assumption about the state of the city comes from an unexpected twist: "I Remember," and the cinderblock wall it was painted on, was cut out and removed by the 555 Gallery, a local art gallery and artist community, so that it could be preserved and put on public display. The fact that the walls of buildings in Detroit can be dismantled in this

[3] All of the images that I reference here are easy to find through simple searches. In all cases, while these pieces are unofficially titled, I have put the most common title in quotes (e.g. "Diamond Girl"). Readers interested in locating these pieces can run searches for the given title + Banksy. The Gallery Iteration can be seen at the website for the 555 Gallery: <http://www.555arts.org/>. Finally, Banksy's website, which I use as the Online Iteration can be viewed here: <http://www.banksy.co.uk/outdoors/horizontal_1.htm>.

way (a type of vandalism well beyond anything one could produce with a can of spray paint) leads to an all too common assumption that the city and the conversations it can inspire are disintegrating or even dead. This assumption is further supported by the fact that the location of "I Remember" was first identified on a large scale through online communities who recognized the Packard Plant from an image on Banksy's website. The identification of "I Remember" through online rather than face-to-face communities seems to add yet another nail in Detroit's coffin. Finally, "I Remember" provides the starting point for another more general discussion about the ills of too much built space, a trend that is already being reversed with the "greening" of Detroit. Today, vacant lots are being reclaimed through active measures such as urban gardening or by simply returning to pre-urban wilderness as a result of neglect. There is an exploded quality to "I Remember" as it is spread across all of these different media and spaces. This explodedness gives the appearance that Detroit's urban fabric—the interweaving of the communities, spaces, objects, and images that define a city—is being carved up and carted away, and with this removal so too goes the city's conversations and memories, and the potential for social change.

However, the unexpected twist of "I Remember," the removal and preservation of the wall it was painted on, is actually a catalyst for a new perspective on the City of Detroit that is radically different from the one described above. Recall that Banksy claims, "[A]rt comes alive in the arguments you have about it." Therefore, I will show that the conversations that are occurring around "I Remember" demonstrate that this artifact is very much "alive" despite being physically and digitally removed from its place at the Packard Plant with an eye toward preservation and distribution alike. This

quality of aliveness is a signal to us that the city persists, albeit in a very different form. It challenges us to trace out these conversations that are happening in other communities, spaces, and media. The radical de-/re-locating of "I Remember" actually reveals that the language we have for tracing the discourses across the media of our cities is in fact quite limited and inadequate. By continuing to use an urban language that cannot sufficiently account for the intersections of different media, we are therefore unable to fully understand and deal with the appeals that these media and spaces are making on us. In fact, in a city such as Detroit, which is presumed to be dead or dying, we actually have the greatest opportunity to explore how a multimedia city fabric operates, how it affects us, and how we can and should be talking about it. In short, we have the opportunity to narrate the city differently.

This chapter addresses an expanded and diffused understanding of the multimedia fabric of today's cities. As we go about our daily lives, media from unexpected places are asking for, demanding, or secretly drawing on our attention, and we must work to understand how this is happening so we might respond to it in the most responsible ways. To this end, I will show how the multiple locations and versions of "I Remember" provide a valuable lens for understanding memory and agency in the contemporary city by re-engaging the concept of the post-urban. The post-urban gives us the language to deal with such fragmented or exploded artifacts such as "I Remember." If the city is truly lifeless, then from where does the meaning of such artifacts come? In this chapter I will respond to the need for expanding the language capable of defining (discursively as well as materially) a city's constructions, its functions, and its expressions today. From this discussion, we can go about finding our place within the city, once again, as active

citizens. Make no mistake, when working to situate how we function rhetorically on a daily basis no context is a substitute for the city.

The Explosion of the Urban City

"I Remember" is not the first time one of Banksy's pieces has been physically removed, and it is often the case that the public art he creates is removed and sold. This trend has become so commonplace for his art that one hotel recently held a promotion in which it challenged its guests to attempt to steal a framed piece of art created by Banksy that the hotel had hanging on its walls ("Want to Steal"). The "cool" factor of Banksy's work and the desire to steal public art for private ownership is no less true in Detroit where "Diamond Girl," another piece created at the same time as "I Remember," was carefully chiseled out of the side of a building, presumably to become a trophy for some lover of urban disaster porn. Equally, for the 555 Gallery, removing "I Remember" was an act of celebration and preservation, although not for the history of the building or even for this particular piece of art. Instead, the removal of "I Remember" represented a desire to preserve a symbol of the city as a whole (Croce). The artifact had become a totem for the city. The 555 Gallery contends that it is "moving art into a more accessible public sphere," and that by doing so, community members can engage "in the arts within a familiar context that is 'home'" ("555 Nonprofit"). The 555 Gallery's intention, however, moves in the opposite direction from Banksy's statement about art "coming alive." This type of protection encourages a community built on static preservation, which is inconsistent with the ephemeral nature of graffiti and the conversations that happen in response. Furthermore the removal of the wall utterly ruptures any assumptions about the

city's physical solidity, its consistency, and the liveliness of the conversations its fabric can inspire. Insisting on preservation in the way that the 555 Gallery does is a zero-sum game because the removal of the "I Remember" wall for preservation means that there is actually less of the city to preserve, which creates a self-fulfilling urban prophecy.

The argument made by the 555 Gallery is not an unique one and is mirrored in Melanie Sobocinski's Detroit and Rome, where each city becomes a museum, or more precisely a museum artifact. The drive to maintain and preserve a city in this way makes the urban fabric and its communities brittle, and resistant to the dynamics of change that arise from the new and emergent expressions of a city and the shifting expectations of its inhabitants. A preservationist approach is common in the face of post-industrial decline where typically there are only two options. On the one hand we might rally to preserve a building/neighborhood/city because of its former glory, maintaining it as a ghost of what it once was. Or, on the other hand, we might raze it completely because it is a wasted shell of its former self and watching it crumble is too painful (and dangerous) a reminder of what it once was, but is no longer. For the 555 Gallery and Sobocinski, Detroit seems to have been irreparably evacuated through suburban expansion, the practices of an information-based economy, and the lifestyles of a digital citizenry that seems to no longer need (or care about what happens to) the urban landscape. Therefore, the only other option is to try and preserve what little is left.

Against the either/or assumption about preservation or destruction, "I Remember" actually counters the distressed and confused condition that is taking place in many post-industrial cities. This confusion is best stated in a question posed by M. Christine Boyer as she explores the cybering of cities: "Is there a way for us to define ourselves and the

space in which we dwell when the city is increasingly referenced as a space of disappearance…a space of anxiety and loss?" (242). With the inclusion of new technologies, and especially digital ones, in cities, we often come to see the different media spaces of cities as interchangeable and we quickly lose a clear understanding of what appeals are being made of us, as well as how to act in and respond to these different media spaces (Virilio 18). We have reached a point today where we are only aware of the city through our usages it, and we have lost our connection to and accountability for the language that we use to describe it. We no longer have the tools to adequately reflect on and evaluate the state of today's cities. Indeed, our definition of the "failed spaces" of urban decline is predicated on static languages that unnecessarily limit how our cities are expressed. Embracing a new rhetoric of cities allows us to take ownership over these spaces by crafting new narratives with new discursive tools. Detroit is an ideal site, and "I Remember" a valuable artifact, for answering Boyer's question and for tempering Virilio's assertion of the "runaway train effect" of today's media interchangeability.

Engaging "I Remember" as an anchor point for seeing how the city appeals to us through unexpected media is a perfect example of what Jeffrey Grabill calls the "rhetorical turn in urban planning theory" today ("The Written City" 129). This turn, he says, fosters participation from a citizenry that is actively engaged by focusing on three things:

> Issues related to the status and value of citizens' knowledge and expertise, the power of citizens to participate in institutionalized decision-making processes, and the ability of information technologies to give citizens a sense of agency. ("The Written City" 129)

This is not to say that we become newer or better citizens through technology. Instead, what I take from Grabill's point is that with the new potentials for agency and action that

technology affords us, we must be particularly mindful of how those media are contributing to our actions. Furthermore, information technology is only one medium of which we must work to be rhetorically mindful in cities, not to mention the material medium of buildings, or the visual medium of signs, and the list goes on… But this mindfulness is not just about being more critically aware of the effects these media have on us. As I will argue in the conclusion of this chapter, being a citizen today is deeply connected to the relationships we are creating across media, thereby tying together not just the conversations within those different media spaces, but also the conversations about those media spaces as well. From this cross-media perspective, we have the opportunity to see how the questions, conversations, and affordances from one medium may be deployed in exciting ways to expand the questions, conversations, and affordances in another medium that on the surface may seem unrelated, but is intimately connected within the context of the city.

A concrete example of this type of cross-media fertilization comes from Carl Abbott, who uses science fiction as an heuristic framework. Abbott constructs a way of fostering what can be called an urban imagination that explores new potential directions of our cities based on the worlds that readers encounter in novels (122). This framework is both understandable and accessible for non-specialists (people who are not architects, urban planners, or developers) as a corpus of readily available examples, albeit fictitious ones, that position the city and its artifacts as part of a narrative (129). One of the greatest challenges for rhetorically engaging with cities such as Detroit is that most of us feel under-qualified to assess or make suggestions about how to rethink, reshape, or reinhabit these spaces because we lack formal training. Instead, what Abbott is suggesting through

the lens of fictional novels, and what I argue for through cross-media fertilization, is that we all possess a tacit knowledge from our exposure to different media that we can use to produce meaningful change in our cities.

Abbott argues that science fiction narratives help us to understand how and why a city functions at a scale that is manageable for the reader/citizen. From these narratives we develop sets of expectations about what spaces mean and do, and likewise, we begin to articulate what spaces fail to meet our criteria. Boyer's "space of disappearance… anxiety and loss," by which we are now defining our spaces and ourselves, is only dominant if physical media are the only media we understand as contributing to habitation, movement, and communication. Certainly, physical spaces affect us in profound ways, and we only need to look at how differently we act in libraries, classrooms, and baseball parks to see that our actions are greatly influenced by our spaces. Social expectations in these spaces aside, their different plans, materials, and programs determine how we use them. What we gain from scholars like Abbott and Grabill is the understanding that the rhetorical construction of physical spaces is only one of the many rhetorical constructions of which we must be mindful. In short, we are restricted in how we can define ourselves if we assume that the physical media we encounter are the only media that affect our actions in cities. Such an assumption leads precisely to the confusion and anxiety that Boyer describes when we must now account for the (inter)action of spaces that are constantly being remediated. By changing our expectations of cities to include the crossing of media boundaries, then we have redefined the rhetorical construction of the city fabric, what spaces qualify as successes, and what

spaces qualify as failures. Through this redefinition we are able to develop new languages for how communication works in these spaces as well as new modes of social action.

The de-/re-locating of "I Remember" positions it as a new and valuable type of artifact that illustrates the cross-media reality of contemporary cities that is exemplified by the flicking of the post-urban condition. The powerful implications of this flickering condition across media, which we saw with Hayles in the introduction, are evident when we consider Banksy's statement that his artwork only "comes alive" when we begin to have discussions about it. Since post-urban artifacts have versions that appear in multiple media, each with its own communities and conversations, then to assess the "liveness" of any artifact, and by extension the "liveness" of the city fabric of which that artifact is a part, we must work to account for how that artifact flickers between its different versions, between its different iterations. "Iterative artifacts," such as "I Remember," demonstrate a type of city fabric that is robust and wide reaching, one in which our understanding of how the city works, how we talk about it, and how it affects us is enhanced by our consideration of the interactions between media.

By exploring the relationships between iterations and how they interact we see how iterations inform and remediate each other. With these relationships in mind, we are now capable of addressing the concerns I raised at the start of this chapter about preservation and memory with respect to the arguments of the 555 Gallery and Sobocinski. Additionally, the relationships between iterations of an artifact help us to make sense of the roles that non-human agents play in today's cities and how they differ from human citizens. The iterations of "I Remember," listed in the order of appearance, are:

- **The Factory Iteration.** With this iteration I have resisted using the word "original" here to describe this site at the Packard Plant since that would imply a hierarchy by identifying the versions of this artifact serially, which is exactly what the iterative approach actively works against. In the Factory Iteration there is no true bounding or framing device for the image and since it is painted on a crumbling wall, it bleeds off into its surroundings. There is a feral quality to the Packard Plant. It exists as a space that had been "domesticated" but is now left to return to a wild state although it still retains hints of its domesticated history. The flickering nature of post-urban cities has a strong emphasis on synchronicity such that the present iterations of an artifact must be considered in relation to the past and potential future iterations as well.
- **The Online Iteration**. This is the iteration that appeared on Banksy's website. Banksy is an artist who works internationally and for most people, engagement with his art takes place online. Digital representations of "I Remember" that appear online generate another type of de-/re-locating that engages with different media, communities, and discussions. Here I'm focusing only on Banksy's website, but there are many other options. This iteration takes on a decidedly imagistic quality that separates it from physical or social qualities that predominate in the Factory and Gallery Iterations.
- **The Gallery Iteration.** This iteration is located about 4 miles from the Packard Plant and the 555 Gallery is actually in a reclaimed site itself. The

> site is in the process of being renovated from a former police precinct by transforming the "former offices, holding cells, and jail cells into [rentable] studios, gallery space, live/work space, and workshops" ("555 Nonprofit"). In this iteration, "I Remember," is now a contained entity with steel banding running around the perimeter of the wall. It is made of spray paint and cinder block that is roughly 8' by 4' and weighs half a ton ("Posts Tagged"). Its preservation is conditional, however, because without this banding it would lose its structural integrity, the spatial relationship of its components, its "wall-ness."

Focusing on iterations neither celebrates the fragmentation of the postmodern, nor promises a return to the totalizing and grand narratives of the modern. As I noted above, the post-urban and repetitious nature of "I Remember" means that any attempt at articulating the artifact's meaning is not a static or one-time effort (DeLuca 334). Instead, as Ernesto Laclau and Chantal Mouffee write, the practice of constructing meaning is one of "establishing a relation among elements such that their identity is modified." They continue:

> The practice of articulation, therefore, consists in the construction of nodal points which partially fix meaning and the partial character of this fixation proceeds from the openness of the social. (Laclau and Mouffee qtd in DeLuca 335)

"I Remember" is just one such "nodal point," and it allows us to identify the overlap between media in Detroit. This articulated meaning, the meaning that arises from different versions, therefore, shifts based on which iterations and their media spaces we choose to consider.

Preservation in/of the City

The majority of Banksy's work is dependent on pre-existing urban conditions and responds to issues such as global economics, political fallout, pop culture, urban blight, and city planning. For example, it is easy to want to read the Factory Iteration of "I Remember" as having political implications that specifically target Detroit: post-industrial socio-economics, the decline of capitalism, urban fallout, environmentalism, racial politics, or any number of other context-specific reasons. As I mentioned above, "I Remember" was not the only piece Banksy created in Detroit in the summer of 2010. He also created three other pieces, each with a unique emphasis: the commodification of beautiful things with "Diamond Girl," the lack of park space with "Kid Draws," and a bit of urban whimsy with "Tightrope Rat." On closer inspection it becomes clear that none of these pieces, are, in fact, specific to Detroit, and an over-concern with situating these artifacts (either spatially or temporally) actually prompts a degree of hyper-localism that predetermines our reading by assuming that the local is the only context available for interpretation (Brandt and Clinton). And yet, the idea that Detroit is simply the frame for a global discourse is brought into question by a satirical comment Banksy makes at our expense, his "consumers," and the capitalistic and preservationist instincts we have for his art. "This'll look nice" appeared in San Francisco in the summer of 2010 a few months prior to those in Detroit. Banksy often recycles elements and stencils in later works as evidenced by the fact that he uses the same figure here that he does in "I Remember," alongside the text: "This'll look nice when it's framed." Frames express delimitation, inclusion and exclusion, and also describe the positioning of spectators and communities. Banksy's jibe in San Francisco becomes a reality in Detroit, where it is

actually possible to remove a wall from a building. This removal dramatically reframes "I Remember" and transforms it into both a globally distributed piece of digital art and a museum piece with an acute connection to Detroit. "I Remember" and its three iterations (in their various frames, media, times, and spaces) expose a deep desire for preservation both *in* and *of* the city that is part of the post-urban generally, and especially so for the conditions in Detroit.

The iterations of "I Remember" also stimulate an understanding of preservation, the relationship between memory and the present, which is closely aligned with the drive to maintain and "concretize" an image, object, or idea. A recent focus in media studies scholarship is on "texturality," "durability," and "stability," which in turn emphasize materiality and longevity of objects and their meanings (Conley and Dickinson). Rick Iedema calls this process "resemiotization," which is "about how meaning making shifts from context to context, from practice to practice, or from one stage of a practice to the next" (41). His example is a building (a mental hospital) that moves *from* conversations *to* sketches *to* blueprints and finally *to* a finished structure. At each stage of representation the artifact is made more durable and yet it is copied fewer and fewer times: lots of conversation, slightly less sketches, fewer refined blueprints, and only one building. At first blush, when we apply Iedema's framework to "I Remember" there appears to be a type of stabilization happening with the artifact whereby its fragility in the Factory Iteration is reduced in both the Digital and Gallery Iterations. However, Iedema's method of establishing persistence has a strong linear progression attached to it. Such linearity restricts the richness of multimedia artifacts and their potential remediations of each other, which, therefore, limits our ability to appreciate the complex

representations of contemporary cities. Tracing iterations along a progression denies the fact that these different representations cause cities to flicker precisely because the individual iterations are not allowed to operate in dynamic conversation with one another.

Such a local perspective frames "I Remember" only within the site we encounter it, be it the factory, the gallery, or online. For Scollon and Scollon, a geosemiotic approach to this artifact supports a local reading since, as they state, "exactly *where* on the earth an action takes place is an important part of its meaning" (19). Such a reading might be appropriate except for the fact that the Factory Iteration has been dismantled and exists now only in photographs. Once re-sited, "I Remember" prompts us to remember a very different set of spatial conditions that result in a tension between where it is now and where it once was. The removal of "I Remember" and its wall ruptures the connection between the artifact's message and its location in the Factory Iteration. While in the case of the Gallery Iteration, "I Remember" comes to frame a discourse not *about* Detroit, but with its placement within the city's fabric and history, it frames a discourse that works *through* Detroit by positioning the city as a discursive and communicative medium. By using Detroit in this way, Banksy presents the city as a living legend, a representation of post-urbanism rather than a specific post-urban site. The drive to preserve this artifact, to remember this city, goes beyond the boundaries of embodied human memory. Indeed, Greg Dickinson, Carole Blair, and Brian Ott contend that "public memory and public memory places are fundamentally rhetorical," and that, in fact, rhetoric defines the relationships between modes of communication that determine "what it means to be 'public'" (2-3). By keeping in mind that the different iterations of "I Remember" operate in radically different media, times, and spaces, it becomes necessary

to consider that because of our contemporary mediated world, the formation of a post-urban public and the construction of post-urban public memory are radically different from those constituted by the urban city.

For example, the Digital Iteration has a unique frame that actually reinforces and extends the representational quality of the Factory Iteration. The artifact is unsigned, and we only know it as a Banksy because it is on his site. Any mention of the fact that "I Remember" has been removed is absent in The Digital Iteration, which identifies the Factory Iteration as a moment frozen in time—an interesting move for an artist who says that art only begins after we start having conversations about it and interacting with it. In fact, this and the other images on the website are all but decontextualized with no information about their locations, making any city-specific discourse both absent and not possible. In place of specifics about the locations of these pieces is a diatribe of abused spaces, caricatures of cities where graffiti might be found. By refusing to identify the locations of his pieces, Banksy's website makes an argument for the interchangeability of these locations, and therefore the Digital Iteration further effaces the specific physical pedigrees of these artifacts and reshapes city memory at a scale beyond the capacity of embodied human memory.

Landscape photographer Edward Burtynsky makes a claim similar to Banksy's statement that began this chapter. In a 2006 TED talk he states that his work does not make a clear indictment or argument ("On Manufactured Landscapes"). In his view, if photographers attempt to predetermine the meaning of their work they actually succeed in over-simplifying the complex nature of the world in which we live. To impose an argument works against what Burtynsky sees as the strength of visual art, which is that it

keeps the reading open to the viewer (Burtynsky, Interview). Instead, through his photographs, Burtynsky's goal is to challenge the viewer with the image so that they see both beauty and fear, so that they are both attracted and repulsed. This back-and-forth of emotions is exactly what we see with the flickering of "I Remember" as we "toggle" between its different iterations.

Banksy's website uses side scrolling, a presentation that evokes a sense of walking down a street. This seriality again puts all of these artifacts on the same plane. Such digital strolling creates the sense of more connection between Banksy's pieces than there could ever be in physical space because Banksy's work appears internationally. These conditions make it seem possible to see Banksy as *a digital graffiti artist* whose materials are paint, brick, and block, but whose means of distribution are webpages, photo-streams, and RSS feeds. These cities' spaces, along with all of their built forms, empty lots, and inhabitants are just some of the many materials used by a globally distributed and iterative artist, and the "public" for "I Remember" and the rest of Banksy's work is available to anyone who is online. The Digital Iteration reinforces a type of large-scale preservation that sutures spaces together thematically—in this case cataloging urban blight—from across the globe. It is not the sum total of Detroit that is preserved in this iteration, but only a small fraction that has tangible connections to other, similarly distressed cities around the world thereby creating a memory schema at the scale of a global public.

In the case of the Gallery Iteration, unlike the previous two iterations, the connection to Detroit is clear. The discourse framing this iteration is one of celebration and the championing of things past. On its website, the 555 Gallery claims that this image

is a mark of Detroit's history and therefore, like many other components of the city's crumbling infrastructure, it is deserving of preservation. The Gallery Iteration shows an artifact on display that is a mark of pride as when we see a young family having their picture taken with it. Interestingly, this is the only iteration in which we see people engaging with the artifact. The presence of the family runs counter to the Factory Iteration where the lack of any spectators demonstrates the artifact's exclusion from the timescale of human experience and memory. "See," the parents seem to be saying, "our city got Banksy to come," and we can imagine the children telling stories of when they remember seeing "a Banksy." But it is equally possible to read this iteration as a drive to preserve something beautiful and unique in a neighborhood's history, completely separate from its (in)famous association with the artist. "I Remember" is preserved as a mark of pride that does not signal someone else's validation of the site, and does not represent what Detroit was or is becoming, but serves as a marker of what Detroit is now, in this moment. Such a sense does not necessarily translate across the other iterations of the piece. Surprisingly, during the process of removal, the clearing of the debris at base of the artifact exposed the hints and outlines of older graffiti that Banksy covered up with his work. This exposure, which we see only with the Gallery Iteration, draws the artifact back to its historic roots, here evoking a sense of memory—the lifecycle of graffiti—and the expectation of effacement. The 555 Gallery's preservation, therefore, raises questions about the active nature of the discourse of the city and the sustainable memory of its public. If preservation—as opposed to renovation, (re)habitation, or some other active engagement—is not the main focus, then the city's discourses shift to parallel those associated with a museum's mummified relics.

In all three of the iterations we see the drive to preserve and the types of preservation take on three distinct forms. Viewed separately, they confirm the fracturing and disappearance of the city, its public, and their memories through the transformation of Detroit into a trope, the thematic dissection of the city for its inclusion in a global urban database, or the hyper-localism of architectural antiquing that cannot see beyond singular objects. However, if these iterations are taken together, they paint a very different picture about how and why preservation occurs in the post-urban condition, and express the richness of preservation through the multifaceted nature of a city's artifacts. I do not claim that a given number of iterations would encapsulate the entirety of a city. Instead, I argue that recognizing the iterative qualities of exploded artifacts like "I Remember" demonstrates new types of preservation, giving credence to the fact that cities such as Detroit are not disappearing, rather they are taking shape across new media and different constructions of community. We now have the capacity to preserve artifacts in rich complexity across all types of media, each with their own sets of affordances for protecting memory. Equally, each medium of preservation has its own unique ways for distilling, shaping, and sustaining meaning. Taken together, these different sets of affordances create a new type of memory system in cities, and memory is compounded and shared across media precisely because iteration highlights the tangential connections that numerous communities have with an artifact.

Palimpsestic Agents

The "I" in "I remember when all this was trees" is ambiguous and raises some fundamental rhetorical questions about the artifact and its relation to the city. Who is the

"I" that remembers? How? Why? Barbara Biesecker notes that in scholarship about the rhetorical situation, "[T]he subject, and by extension the audience, is conceived as a consciousness, an 'I' which thinks, perceives and feels, an 'I' whose self-presence or consciousness to itself is the source of meaning" (123). In agreement with DeLuca from earlier, Biesecker continues that dethroning the human subject, "enable[s] us to read the rhetorical situation as an event structured not by a logic of influence but by a logic of articulation" (126). In a post-urban city such as Detroit, which is taking on a new form as the iterations of its artifacts connect across media, how are we to identify and explain who or what has the capacity for action and memory? In short, where are we to find the "I" that remembers in the post-urban city? By understanding how memory is retained in contemporary cities, how it is assembled and articulated, we will gain a new perspective on the range of post-urban agents.

Marilyn Cooper contends, "Actors, or agents, are entities that act; by virtue of their action they necessarily bring about changes" (424). Provoking action, reaction, or at least consideration is a driving force for many graffiti artists, and Banksy says as much in his earlier statement, "Art comes alive in the arguments you have about it." But in the case of "I Remember," who is having these arguments, where are they, and how does the process of iteration inform how these arguments are constructed? Who or what in the post-urban city is acting and producing change? Is it a literate reader of the text, which, sadly, is a skill that many lack in Detroit? Or, is it the urban tourist seeking disaster porn? Is it the gallery visitor, or the digital flâneur? Cooper argues that agency is "an emergent property of embodied individuals," and she asserts that agency involves consciousness,

intention, and self-reflection, which presume an organic constitution (421). And Cooper would agree in a restrictive definition of agents. She writes:

> Unlike subjects, agents are defined neither by mastery, nor by determination, nor by fragmentation. They are unique, embodied, and autonomous individuals in that they are self-organizing, but by virtue of that fact, they, as well as the surround with which they interact, are always changing. (425)

In the post-urban city, however, even Cooper's assertion that agents are always changing does not go far enough because the agents remain separated from their surroundings, which appear to be incapable of acting or producing change. If bodies are the only dimensional measure by which we recognize agency, then we needlessly restrict the possibility for seeing other types of agents that might have the capacities for action and memory embedded, not embodied, within them. In fact, the fragmentary nature of post-urban iterations means that the capacity to remember is pushed beyond the limits of the human (Carolyn Miller 143). After all, with Detroit's shrinking population, the potential for the literal shrinking of the city's borders, and the prospect of the city large parts of the city "going dark." Chris Christoff has recently discussed Detroit's plans to turn off half of the city's streetlights. Such an act is decidedly an act of spatial rhetoric, as the darkening of areas is used to "encourage" populations to move into lighted, and therefore approved, areas (Christoff). In short, fewer and fewer people are present to do the remembering, to act as the embodied "I" in "I Remember."

For DeLuca, the human subject arises when someone is positioned at a "nodal point," at the "conflux of diverse discourses" (338, 341). This assertion gets complicated when, in the post-urban city, it is artifacts such as "I Remember" that are positioned at both the confluxes of discourses and the confluxes of media, not necessarily human

subjects. We humans may engage with the different discourses and media, but it is the artifact itself that is truly the anchor or nodal point. Recognizing that it is the artifact positioned at this "conflux" means that our previous measure for agency, the "human subject position," however dynamic and overlapping, no longer holds. In post-urban cities such as Detroit we need a better measure than the human subject to adequately deal with how agency and memory are working. After all, once a population leaves, or a building is razed, the only way for memories to persist is in a wide range of agents that have the capacity to preserve the previous iterations of a space.

The exploded condition of "I Remember" generates multiple perspectives where remembering and memory are embedded in a community of agents (humans, objects, and spaces) that constitute each iteration of the artifact. Describing Nicholas Negroponte's term "intelligent agents," Amy Baylor writes that he originally described them as "electronic 'butlers,' performing such tasks as filtering e-mail, scheduling appointments, informing regarding investments, and making travel arrangements" (374). But the agents we are encountering in the post-urban city are not bot-like as in Negroponte's description, which positions them as working in service of human users but does not recognize them as having any rhetorical weight themselves, particularly agency. Further, for Negroponte's intelligent agents to be more than lines of code on a printed page, they can operate only in technological contexts such as computer programs or online. Instead, the designation of agents that I am arguing for in the post-urban city is informed by Bruno Latour's description of non-human actors in his discussion of actor-network-theory. Latour writes that our engagement with our surroundings, what he calls "local interaction," is in fact "the assemblage of all the other local interactions distributed

elsewhere in time and space, which have been brought to bear on the scene of relays of various non-human actors" (194). Following Latour, I define a non-human agent as any object, image, space, or text that through its design and construction has persuasive effects on our actions. In short, an agent, in the non-human sense, is something that suggests, or better yet inspires, change and action on the part of the human agents. Further, the connections between iterations are made stronger when we consider that the "local interactions" of one iteration inform, and are informed by, the "local interactions" of other iterations of that same artifact. After all, one major undercurrent of rhetoric is exploring how text and speech actually produce change. Why, then, can we not see the spaces and elements of the city as having the same capacity for action and change that we grant to words? Through these local interactions we can firmly deny the disappearance of a city such as Detroit. For these non-human agents memory, and the capacity to remember, is not located, stored, or embodied in any single, individual agent but is instead embedded in the multimedia fabric of the city itself. Through this sort of redundancy, Detroit can never be fully erased. Therefore, it is up to us to figure out how to engage with the patterns of liveness the city is capable of when its artifacts appear simultaneously across so many different media spaces.

To locate an example of a non-human agency and embedded memory, we need only look as far as the image of "I Remember" itself. In this image we see the somewhat guilty-looking youth of ambiguous age, gender, and race—although s/he seems African-American—who, with a dripping brush and paint can, seems to have written the text. Recall that once the wall was removed and the rubble taken away from its base, we see that "I Remember," too, was painted over something. By leaving the site untouched,

Banksy's work takes on a quality of being within and behind the rubble, perhaps even predating it. Inserted into the site in this way, the piece actually expresses a sense of persistence and the capacity for memory in its use of appropriation, caricature, and overwriting. The Gallery Iteration is the only version where we see the rubble removed, and as such, this sense of longevity that the space of the gallery instills in "I Remember" shifts when we consider that old graffiti is often painted over by new. In the Factory Iteration, "I Remember" is meant to be effaced by other graffiti artists, to be destroyed by individuals looting the site for scrap metal, or simply to crumble as the building disintegrates further. It was to be remembered as it poked out from behind the next graffiti piece that should have overwritten it, and yet, because it was preserved it now serves as an agent of post-urban public memory because the conflux of its different timescales and spaces position it at the intersection of conversations that causes change in our behaviors towards and our understanding of Detroit.

Edward Soja writes about post-modern spaces in cities that have the repeated qualities of iterations. He writes, "Everything is seen as a simultaneously historical-social-spatial palimpsest…sites in which inextricably intertwined temporal, social, and spatial relations are being constantly reinscribed, erased, and reinscribed again" (18). The relationships between the three iterations of "I Remember" generate exactly the same palimpsestic quality that Soja describes, while at the same time they extend Cooper's argument that agency confronts the subject/object divide by breaking down the separation between organisms and surroundings (Cooper 425-7). The subject/object divide is broken down when we see the capacity for memory is present in objects and spaces as well as in organisms and people. Writers such as Rebecca Solnit and others have been discussing

the evaporation of Detroit for more than half a century and the memories that have been disappearing with it. David Fleming expresses a similar fear that the erosion of memory is tied to the physical medium of spaces and it is exacerbated by the introduction of digital technologies into cities. He writes:

> This modern flight from place has only intensified of late. In the midst of a global economy that seems to have made political borders irrelevant and attachment to local community suspect; a technological revolution that appears to have dramatically reduced the role of space in human action and interaction…and a culture that celebrates, above all else, mobility and change; it is difficult to make the case that place still matters in human affairs. (*City of Rhetoric* 185)

Looking for the "I" using iteration, however, prevents this from becoming solely a matter of digital technologies against physical spaces. Instead, it is the palimpsestic quality brought about by the interactions of an artifact's iterations across media that generates meaning. A memory system based on iteration is not limited to cities and can certainly be applied to other contexts. By acknowledging that spaces, images, and objects across the media spectrum also have the capacity to "remember," we see that it is the physical and digital media working together that create the contexts in which our social lives occur at any scale.

Jeff Rice has a description of Detroit that works to take advantage of its interconnectedness with other cities and communities. He writes, "By imagining the urban environment as one of encounter rather than fixed place, we can begin to conceptualize a city like Detroit as a network" (Rice). Similarly, Nedra Reynolds argues:

> In this postmodern culture, we do need theories of movement, those that advocate travel and mobility, in order to give readers and writers both strategies and tactics for negotiating among different discourses. (*Geographies* 4)

To Reynolds's assertion that we need theories of movement that are more broadly encompassing, I would add that in post-urban cities we must first extend our definition of agents across these "different discourses." When looking for the agent, the "I" that is remembering, if we let go of the notion that we are only looking for a "who" and instead look for a "what" or even a "where," then we necessarily change our definition about what type of agent can serve as the seat of memory. In other words, the designation of "agent" should not be automatically human. Instead, to identify an agent today means we must recognize the diverse communities that are responding to the palimpsestic and overlapping nature of artifacts in the post-urban condition. Palimpsestic agents are more post-human than post-modern insofar that artifacts (objects and spaces) can now be seen as the "origin of effect or action" (Lundberg and Gunn 88). The largely accepted convention is that rhetorical agents arise within the construct of a rhetorical situation. However, by considering the different iterations of an artifact we see palimpsestic agents at work in overlapping situations. Palimpsestic agents redefine the "origin of action" when radically different situations and media are intimately and unexpected linked through of their common connection to an artifact.

Andrew Pickering conceives of the "mangle of agency" to describe the relationship between scientists and their instruments and machines. Pickering contends that while the scientists have agency in the creation of their instruments, once they set these machines to task, the scientists take on largely passive roles (21). In Pickering's construction, the designation of the "agent" flips back and forth between scientists and instruments so that first one group has it and then the other, be it the scientists who are designing the experiment or the machines that are actually crunching the numbers, and

this creates an either/or condition. The trouble with Pickering's construction is that action is singular and exists for only one agent at a time in the given ecology. In the post-urban condition, however, the act of remembering, and having the capacity to store and recall memory, creates a condition in which the capacity for change is always multiple. The overlapping nature of palimpsestic agents means that they thrive on the storage of memory, its recall, and the resulting informed action that takes place when memory ceases to come from a singular agent because we refuse to confine memory to one iteration (time, space, medium) of an artifact. For example, the actions of the gallery workers were prompted by the identification of "I Remember" at an online website, which prompted a recall of memory about "I Remember" at the Packard Plant, itself an architectural site that acts as a talisman, a storage site for the history (both good and bad) of Detroit and the auto industry, which in turn affected how "I Remember" was received and displayed at the 555 Gallery. Taken together, the different media allow us to understand that it is the strata of compounded, iterative memories that create public memory in the post-urban condition. The act of remembering, brought about by so many different agents, means that post-urban memory is a palimpsestic action.

Compiled Citizenship

Using iteration to help us rethink agency actually provides us with the new language we need to consider how citizenship in the post-urban city is changing as well. In short, our new understanding of agents gives us a better understanding of ourselves as we are taking full advantage of our emerging post-urban environment. Aristotle bases his definition of citizenship on "deliberation" and "judging," which creates a concept that

can account for the conditions that are other than democratic (Johnson 79). However, for Aristotle, such deliberation necessarily happened in face-to-face contexts, which are no longer as all-inclusive today as Aristotle had intended. How do we make the reflective qualities of the citizens more robust so that we are better able to respond to the non-human agents we encounter on a daily basis? More specifically, if citizenship is connected to the liveliness of the people in a city, the polis, then how do we describe what it means to be a citizen in such a physically depopulated city as Detroit?

Using iteration to understand our multimedia relationships in cities provides us two major benefits for citizenship. First, through the interactions of these iterations, it becomes apparent that the languages, conversations, and questions that we might assume are unique to one medium are not so dissimilar to the languages, conversations, and questions of the other iterations and media of that same artifact. By working to breakdown this assumption about language specificity, we can work to get past the idea that only architects can talk about built space, for example. The second way iterations benefits citizenship is related to the first. By recognizing the similar conversations happening in different media, we can take the languages and questions of one medium and use them to expand or challenge the languages and questions of another medium. Recall that this is similar to Abbott's point when he argues that science fiction can give non-specialists inroads into discussions about cities. This crossover of conversations happens because we are able to subtly change our perspectives on an issue by considering a different iteration, and such a small shift may be all that is required for comprehension.

For example, when Latour is talking about his new perspective on social relationships he writes that he is “going to define the social not as a special domain, a

specific realm, or a particular sort of thing, but only as a very peculiar movement of re-association and reassemble" (7). This is all well and good and quite exciting, but it is somewhat abstract, and may be difficult to wrap one's head around. If instead we see these social relationships happening in the multimedia city, then what other media, what other conversations could we turn to for another perspective on how relationships form and how we define our roles in them? One readily available conversation is digital media, and in computer programming, when a digital object is created it is compiled from sequences of various languages and actions. If that object is found to be incorrect in some way, rather than reworking this object, a programmer would simply scrap this component, change the interior languages and actions, and recompile the object. As new agents come to inform an artifact such as "I Remember," our role as citizens lies in deciding which aspects of each iteration we are choosing to engage with and which ones we are choosing to ignore. Citizens who actively participate in their cities necessarily take advantage of the contingent properties of the post-urban to create what I call "compiled citizenship," which is based on the potential for the citizens to create new relationships across iterations and to (re)compile these relationships as necessary.

This idea of (re)compiling our reflective processes, the hallmark of a citizen, returns us to DeLuca's description of articulation. He writes:

> In a world without foundations, without a transcendental signified, without given meanings, the concept of articulation is a means to understanding the struggle to fix meaning and define reality temporarily. To say that we live in a world without eternal truths or given meanings is not to say that any and all possible articulations are equally likely. (DeLuca 334)

Therefore considering how an exploded artifact such as "I Remember" reshapes citizenships in the post-urban city, and lets us look at how the sequence of events that led

to the wall being removed by the gallery. Recall that the large majority of people that engage with "I Remember" are not physically present because they are encountering the artifact online. Theses are people who are interested in Banksy, graffiti, or the fate of post-industrial cities. And yet, despite the fact that they may not be physically in Detroit, they play a considerable role in shaping the city. After all, it was their enthusiasm, in part, that prompted the 555 Gallery to remove the piece. Because of their engagement with one or several of the iterations of "I Remember," these people are creating and recreating citizenship practices and strategies across the spaces of iteration. The spaces we inhabit inform how to act appropriately, and how to act as responsible citizens within them.

Compiled citizenship confirms what we have known about the city for a long time: it is not just *a* site, *a* material, or *a* collection of people. And yet, we have persisted in the notion that a city's artifacts are singular. The unique provenance of artifacts such as "I Remember," which are occurring with greater frequency in post-industrial cities, necessitates approaching them at a scale that challenges the singular perspective that we bring to our artifacts, the constructions of our own post-urban memories, and our misguided assumptions about the disappearance of the urban fabric. Instead, if we understand the post-urban fabric as narrating the city across the boundaries of media and spaces, then we can begin to imagine new ways in which the city, and our possibilities for social action, can persist beyond just physical, place-based, and humanistic assumptions. Human agents, whether physically or digitally present, act as citizens in spaces such as Detroit by creating additional iterations, which add to the richness of artifacts such as "I Remember." Even as these agents respond to or amend the iterations of others, it is the

growing conversation around an artifact, spanning the breadth of our media spectrum, which demonstrates the new expression of liveness in our cities today.

The post-urban city is enriched by multiplicity and affords us the opportunities to develop practices for habitation and community. Such a city goes beyond Manuel Castells's "space of flows" insofar as it is not premised only on the movement of information at a distance or even the act of connecting people. Instead, by using iteration as an approach to cities we come to recognize the multifaceted communities and sets of practices surrounding a given version of an artifact, and the ways these communities create persistent versions of the city beyond the troubled solidity of physical infrastructure, or the ethereal and utopian hyper-connectivity of the informational revolution. Through compiled citizenship, palimpsestic agents take on more active roles, and we can imagine continual iterations of "I Remember" that compound and enhance but do not erase the depth of a city's memory. After all, it is not hard to "remember trees" among the feral spaces of Detroit that are overgrown with vegetation, and because of this, as citizens, we are forced to remember. With 40+ acres of land returning to pre-industrial conditions and the repopulation of animals such as deer, pheasants, and coyotes, it seems quite possible and appropriate that in the near future, while walking through the post-urban City of Detroit, we might find a line of text carved into the trunk of a tree: "I remember when all this was buildings" (Choi). This potential iteration of "I Remember," and the ability to recall and locate it in meaningful ways, comes from the layering of the other memories, adaptations, and iterations of this artifact. This is a function of the extended and multimedia agents in the post-urban city, and, perhaps, speaking through Detroit, as Banksy does, is the only way to express, celebrate, and mourn something at

the scale of a city. We need the overlapping of artifacts in unexpected media because without them, our memories of these cities and our ability to act in them remain limited and one-dimensional.

Chapter 2: Collapsed Artifacts

Collapsed Artifact: Notre Dame Cathedral

Your effort to remain what you are is what limits you.
— Puppet Master*, Ghost in the Shell*

During a 2007 TED talk (Technology, Entertainment, Design), Microsoft demonstrated a new technology for spatial modeling called *Photosynth* (Aguera y Arcas). Finally released in 2008, *Photosynth* is a tool that takes a collection of photographs of a physical space or object and stitches them together in a similar fashion to the ways some digital cameras will create a panorama from three separate photographs. In both cases, the trick is to find instances of overlap between two or more images that the programs can use as reference points. *Photosynth* grew out of a collaboration between Microsoft's Research Lab and individuals from the University of Washington that focused on an emergent phenomenon of tourism that parallels the overlapping used in some panorama technology. They write:

> When a scene is photographed many times by different people, the viewpoints often cluster along certain paths. These paths are largely specific to the scene being photographed, and follow interesting regions and viewpoints. (Snavely, et al 15:1)

This clustering led the team to explore the potential for these overlapping viewpoints, or "photo paths," to reconstruct three-dimensional space (Snavely, et al 15:1). *Photosynth* brings the images and the organization of physical spaces (a medium usually associated with connection and habitation) into a digital environment (a medium usually associated with information and methods of organization and inscription that are not achievable in physical media). *Photosynth* compresses the usage patterns of physical and digital spaces, and embeds digital information in an interface that works to mimic the physical

relationships of cities. The product of these overlapping techniques and the collapsing of physical and digital media is a "synth": a digital three-dimensional reconstruction of an artifact that a viewer can dynamically move around, dive through, and augment by tagging and embedding links and other information.

These features are exciting and have many potential uses, but it is the perspective on media combining that *Photosynth* brings to our discussion about the post-urban condition that makes it a valuable artifact for exploring how we are choosing to live in, deal with, and celebrate the mediated nature of cities today. The most telling feature is that the synths we create, and the spaces they represent, are meant to be shared with other users. On the *Photosynth* website, the program's capability to be a photo-sharing service is actually downplayed, and instead it is marketed as something closer to virtual reality or a tool for sharing not just data about spaces, but experiences of those spaces as well:

> You can share or relive a vacation destination or explore a distant museum or landmark. With nothing more than a digital camera and some inspiration, you can use Photosynth to transform regular digital photos into a three-dimensional, 360-degree experience. Anybody who sees your synth is put right in your shoes, sharing in your experience, with detail, clarity and scope impossible to achieve in conventional photos or videos. (*Photosynth*)

To claim that the purpose of *Photosynth* is for individuals to "share or relive a vacation destination" means that what is being constructed (and presented to users) is more than just overlapping digital photographs stitched together to create panoramas. It would be hard to deny that a three-dimensional experience of a space might afford greater experiential possibilities beyond "conventional photos and videos," and we can see this in the examples of synths, which range from culturally significant artifacts such as Notre

Dame Cathedral to those that are more mundane such as a person's new car or the inside of a *Dungeons and Dragons* gaming club.

But what is the limit of this sort of sharing? Microsoft claims that users are provided with an experience beyond even the scope of physical space because its synths are capable of aggregating photographs from so many different tourists while also including digitally embedded data about these spaces. In short, *Photosynth* is claiming to be significantly more than the sum of its parts, and I will deal with the notion that photographs can serve as reliable substitutes for the experiences of the photographers later in this chapter. For now, I will argue that the blanket assumption that spatial "experiences" can be codified, contained, and transmitted is troubling because it ignores the separate contributions and affordances of the various media that are interacting in a city and collapses them into the singular medium of the synth. *Photosynth's* claim to extend the reach of spatial experiences takes up where the dreams of virtual reality have been unsuccessful, and promises new opportunities for (re)experiencing not just spaces, but the meanings we create from inhabiting these spaces as well.

There is a danger that comes from engaging with the collapsed media of artifacts such as *Photosynth*. By blindly participating in the contemporary insistences on hybridity, we lose track of how all these different media are affecting how we inhabit cities today. Therefore, this chapter works to draw apart this type of collapsed artifact in to its constituent parts. This drawing apart means recognizing and accounting for the different iterations of these artifacts, where each iteration presents us with a different medium, and through the process of synthing these media are being blended together. By doing so we are better able to trace out the different media that contribute to our

experiences and meaning making, and the appeals these media are making on us. In response to *Photosynth's* claim to allow us to (re)experience spaces, this chapter will deal with habitation as its main element of the post-urban in four sections. First, I will discuss the changing nature of habitation in post-urban cities as a means of foregrounding how we are approaching the collapsing of media in cities today. Collapsed artifacts such as Photosynth are built on the assumption that "one more" medium, one more avenue for storing and accessing information, will have captured the full essence of the city fabric. Examining post-urban habitation allows us to construct a more dynamic and reflective model that does not rely on the continual amassing of information. Second, I will take up the codification of experiences into data, what I am calling informationalization, in order to address the assumption that *experiences* and *information* are the same and can be used interchangeably. This section will be framed in part by the work of Lebbeus Woods, an architect who deals with relationship between violence, trauma, and architecture. In the third section I will address the practices of inscription in the post-urban city. This is crucial for our discussion because as experiences are informationalized, so too are they reshaping the contemporary definition of habitation. The fourth and final section will introduce the mode of citizenship that arises out of collapsed artifacts, obsolescent citizenship, which is built on the relationship between nostalgia for an artifact and the capacity of a city's mixed media to let us recall and access memories of an artifact at a collective level.

The Collapse of the Urban City

In the 2007 TED talk, principal software designer on the *Photosynth* project, Blaise Aguera y Arcas, uses a synth of Notre Dame Cathedral (NDC) that is "done entirely computationally from images scrapped from Flickr" (Aguera y Arcas). Rather than creating the demo from one collection of photographs, Aguera y Arcas shows a synth created using images that range in perspective and resolution and that come from multiple photographers. The photographic albums that tourists have posted to Flickr or Facebook are dispersed, varied, and incomplete, and the exciting power of *Photosynth* is that it can draw these images together and present a "complete" model of the artifact. *Photosynth* is representative of a current trend towards seeing, experiencing, and recording the world through technologies that capitalize on suturing together not just images but the form and content of other media as well. One example of how this trend is taking shape is the availability of the *Photosynth* app for the iPhone and other handheld and camera equipped devices. This program is now even more accessible for users at various scales who are able to capitalize on—and capture—whatever unique location they find themselves in. By moving into these powerful and "smart" handheld devices, *Photosynth* and other multimedia programs increase the likelihood that they will filter our city experiences.

A synth, however, is more than just an assemblage of photographs. At its richest, a synth is a combination of different informational layers (visual, textual, and experiential) that generates new opportunities for narratives about an artifact. From these narratives, which are based on the practices of suturing photographs and embedding location-specific or experiential data, *Photosynth* enables new types of experiencing and

opportunities for "being in" our environment. We navigate by jumping from photo to photo, or we are presented with a reconstituted version of the space in the form of a "point cloud" that shows the points of overlap or intersections between the many different photos. But we are also presented with the possibility to include historical, opinionated, and geographic information in a synth that give us a very different narrative of the artifact and, therefore, a very different opportunity to inhabit it. This type of data-driven habitation takes shape when individuals exploring or experiencing the visual model of an artifact find links or tags to websites, Wikipedia pages, or commentary about the artifact. In this case, the explorer of a synth might read some text about a particular saint carved on the wall (one example suggested by Aguera y Arcas), and then jump back to the larger synth before they scan through the countless versions, and a range of photographic quality, of the famous rose window that have been taken by all manner of photographers from their unique perspectives of the site.

Trouble arises when we see a synth as a better version of the artifact in question because of its informational richness that comes from the photographs, perspectives, and memories of the collective. By proposing to seamlessly aggregate the different media of collective experience, *Photosynth* sounds like the culmination of what Jay David Bolter describes as transparency, which runs counter to the notion of media hybridity. On the one hand, hybridity is what arises out of mixed realities, or the combination of physical and digital media forms that "enhance or reconfigure the user's immediate relationship to the world around her" (Bolter 109). On the other hand, transparency is "those practices that strive for seamless, transparent representation of the real within a single medium or media form" (Bolter 110). Paul Milgram and Herman Colquhoun go a step further and

write that mixed realities "define situations in which it is not clear whether the primary environment is 'real' or 'virtual' or when there is no predominance of 'real' or 'virtual' elements in the environment" (Milgram and Colquhoun in Souza e Silva 264). For our discussion of the post-urban, I dislike the real/virtual descriptor. The problem is that by using the term "real" we are saying that all other media are somehow "less than real" and physical media are what every other media must ascribe to be like, thereby undervaluing and limiting their own unique affordances. Putting this argument of real/not real that Souza e Silva raises aside, however, we can take from her definition one question that is even more important. How does the meaning of habitation change when, as Souza e Silva writes, we can no longer clearly distinguish between the physical and digital components that make up our environment? Following the language put forth by Aguera y Arcas that we can "experience" space by engaging with a synth, our methods and reasons for defining habitation are some of the most pressing for post-urban city dwellers today.

At its most basic, habitation in cities comes down to the ability of individuals to make sense of the experiences they are presented with as they work to *produce* meaningful and actionable solutions to a problem or contribute to a conversation from those experiences (Grabill "The Written City" 130). Similarly, Richard Marback discusses the intimate relationship between rhetoric and urban planning. He writes that inhabiting a physical space necessarily means inhabiting its discursive space, and likewise since writing is a situated practice, we cannot inhabit a discourse without also experiencing and inhabiting its physical space as well ("Learning to Inhabit" 52). Marback continues:

> So the place that is the old sports stadium or the crumbling train station or the reclaimed factory is made to mean through discourse about what

> matters, and students writing through those discourses cannot but inhabit them and through them come to inhabit the landmark with an enlarged perspective. (61)

In other words, individuals become inhabitants of a space (regardless of the medium of that space) when they are able to acknowledge and engage with the communicative and inscriptive practices that it affords them. Therefore, habitation is a reflective practice that amounts to "making one's mark" *on*, *over*, or *in* a space we have experienced. This expansive view of habitation's definition—to which I include text, images, among the spatial media and the media for discourses on those spaces—dramatically reshapes where, when, and how we see ourselves as citizens of a space, as well as who is capable of producing social action.

With this definition in mind, how do the inscription practices of *Photosynth's* collapsed media affect this model of habitation? The cost of these new inscriptive experiences is most immediately seen in the image requirement for constructing a synth. For example, "The Photosynth Photography Guide" states:

> Each part of the scene you're shooting should appear in at least three separate photos taken from different locations. This rule means that you are going to shoot a lot more photos for a synth than you would for any other purpose. (1)

These highly specific and strict requirements certainly cause us to see, experience, and inscribe the world in new and highly defined ways. Interestingly, the middle step of taking the photographs needed for the synth, between the physical space and the virtual model, has a type of participation that is unique only to it. The type of participation/inscription/habitation necessary for the photo-taking step is downplayed so that the space can be "experienced" as a "true" and representative 3D model. And yet, by the nature of its expanded capacity for inscription, the synthed version of a space will

have a fundamentally different model of habitation than the physical space with its own unique set of affordances and the appeals that it is making to the inhabitant.

As I mentioned earlier, it is actually the collective power of *Photosynth* that adds complexity to the relationship between inscription and habitation. After all, the goal with this program is not just to have individually created and experienced synths, but to have a collective (bordering on global) experience of a space that comes from the melding of texts, images, sounds, spaces, and data. We see this goal in Aguera y Arcas's descriptions of *Photosynth's* potential:

> What the point here really is, is that we can do things with the social environment…taking data from everybody, from the entire collective memory of visually of what the earth looks like and link all of that together, all of those photos become linked together and they make something emergent that is greater than the sum of the parts…this is something that grows in complexity as people use it, and whose benefits become greater to the users as they use it. Their own photos are getting tagged with metadata that somebody else entered…a byproduct of all that is immensely rich models of every interesting part of the earth, collected not just from overhead flights and from satellite images…but from collective memory. (Aguera y Arcas)

Through mixed realities, and synths in particular, we can create not just a robust experience in the present, but also an extension of the artifact into the past. By extending the collective memory system of cities and making it available in multiple and intersecting media we are able to entertain nostalgic fantasies about an artifact in the city fabric even if that fabric has been altered or even destroyed. This clinging to constancy is based on our ability to catalog the many experiences of individuals into a singular and emergent collective experience and, by extension, a collective type of habitation that is presented as both "singular" and "true." It is no longer enough to simply take pictures of an old cathedral on our vacation, nor is it possible to be just one tourist among many.

Now, through the expectation of total information awareness, we are forced to acknowledge the conversation made up of all the other tourists' inscriptions of that artifact. These collectively inscribed models of habitation challenge our understanding of these spaces' rhetorical affordances because any attempts to situate oneself in an effort to determine proper responses to these contexts is thwarted by the assumption that we can and must see things through the eyes of everyone else.

Stephen Graham writes that information and communication technologies (ICTs) are "helping to facilitate processes of intensifying global urbanisation" (3). This intensification of the global nature of our cities assumes that space, rather than being about establishing relationships, instead becomes synonymous with connectivity and the accelerated movement of information. Through his description of ICTs and global urbanization, Graham positions the relationship between physical spaces and rapid forms of communication as one in which not just information but the spaces themselves are now sharable. Such sharability is predicated on a transparency or fusion of media, which, as Graham describes, happens when "cities and ICTs are thus fused into 'socio-technical' and 'hybrid' complexes" (19). Of this fusion, Graham writes:

> The hybrid concept of the 'cybercity' is used…to denote the inseparable fusion of relations that are mediated by ICTs with those that are mediated between human presence, and movement, within and between urban places. The concept underlines that new media practices and technologies do not substitute for the city or the body in any simple and direct sense. (22)

Likewise Malcolm McCullough's discusses a "paradigm shift from cyberspace to pervasive computing" that does not separate but combines physical and digital spaces. McCullough continues:

> Instead of pulling us through the looking glass into some sterile, luminous world, digital technology now pours out beyond the screen, into our messy places, under our laws of physics; it is built into our rooms, embedded in our props and devices—everywhere. (9)

Both Graham and McCullough work to temper the scope of ICTs by saying that they do not replace the physical city or the body with digital counterparts. And yet, it is the fusion and the "messy connection" that, while exciting and more complex than either a physical *or* digital perspective, seems to suggest that we forego exploring the differences between the media in favor of blending, fusion, or hybridity. The "richness" of these models exchanges the complexity of cities—which relies on growth, change, and adaptation—for an informational complexity—where more equals more and engagement becomes about issues of accessing and filtering rather than situating perspectives. When media are collapsed there are inevitable conflicts that arise when their intersections are erased. This erasure is unfortunate because it is through these conflicts that we sort out the most appropriate inscription practices for a space.

The global scale of media fusion in cities confirms the collective inscription/habitation efforts of *Photosynth*. The collapsing of media into a seamless flow of sensory information that Aguera y Arcas is championing smooths out the different scales of time, space, and memory that each medium brings. Recognizing the messiness of cities is our starting point. Now as we work to sort out how to actually live in these spaces, we must figure out how to situate ourselves as various scales and in various media. After all, we are only truly participating in one medium, one space, at any one time. Giving preference to these indeterminate fusions, however, leaves the individuals, who actually inhabit or engage with an artifact, with little explanation for how and why to act other than insist that they deal with so many media at once. This is a significant

rhetorical exclusion: if the conditions of a space inform how we are to act in it, then a hybrid space, rather than being freeing and flexible instead become diffuse, amorphous, and unwieldy. From where are we to draw clues about how to act in new spatial forms such as synths and other collapsed, multimedia artifacts?

The collective mixed realities of *Photosynth* provide an excellent example of the "flickering" quality of the post-urban cities today. Collapsed artifacts appear to smooth out the vibrant differences between media in the city context and delay or erase the "flickering" quality of the post-urban, even though what is really happening are very quick movements between iterations expressed by their different media. In order to demonstrate and preserve the flickering quality in the relationship between media and the city, I will address a partially speculative artifact, the synth of Notre Dame Cathedral (NDC) that was presented at the TED talk mentioned above. By pulling apart its iterations and their media, and resisting the urge to collapse them in to one another, we gain a clearer sense of one way that the post-urban condition helps us to rethink our place in cities today. These three iterations of the NDC are:

- **The Physical Iteration.** This iteration is the physical structure of the Notre Dame Cathedral, and it persists across the media of the other two iterations (the visual and the informational) that collectively build from and in many senses work to mimic its physical construction.
- **The Visual Iteration.** This iteration highlights the assumptions a synth carries for emergent characteristics among large groups as evidenced in the "photo paths," or the common angles and types of shot most tourists take of a landmark. That said, this iteration is only partial because, while

Aguera y Arcas demonstrates the potential of *Photosynth* by creating the synth using only photographs that were tagged as being related to the NDC on the photo-sharing site Flickr, he did not own the rights to any of these photographs. As such, our only access to this artifact is in the TED video. There are currently a few sites that are working to create synths using a collective model. For example, *National Geographic* is developing a number of synths of major culturally significant landmarks using photographs submitted by photographers. These synths are particularly useful because they demonstrate a global approach to cultural landmarks, many of which are built forms.

- **The Informational Iteration.** This iteration speaks to the layering of textual and often times digital data that we inscribe on, over, and in our artifacts. This iteration too is speculative, however, because although Aguera y Arcas talks with great enthusiasm about the ability to link certain spatial features to Wikipedia pages of other information online this option is not yet a reality. And yet, his enthusiasm speaks to our larger cultural expectations for the interactions between media. This approach of tagging and embedding information in the spatial form directly parallels the practices of augmented reality, particularly so when the interface for the data—the synth of a physical object—is now a digital model of the artifact itself, thereby spatializing the information. Describing a synth as a recreation of space that is a digitally assembled model of collective experience belies the complexity of layers that are interacting as our

attention flickers between them. While also collective in nature, data is added to this iteration in a much more individual and *ad hoc* manner.

From the discussion of these iterations, in the conclusion of this chapter I demonstrate how collapsed artifacts lead to another new take on citizenship, what I am calling "obsolescent citizenship." This citizenship has to do with a drive to relive, revisit, or reinterpret our current spaces using digital information and technologies: a "nostalgic ambition," or the desire not just to remember but also to recreate. This ambition comes not from our post-urban perspective, but from a hybrid model of cities that is based on the tension between media. From this perspective we come to believe that our experiences can be fully supplemented with complete and persistent access to information not previously available in other spatial forms. Obsolescent citizenship demonstrates how, despite being technologically savvy and "plugged in," we are not quite in pace with the things and spaces around us, and perhaps even less than we imagine. Inhabiting artifacts such as *Photosynth* means we are trying to force a type of inscription practice, a type of habitation, and a type of rhetorical engagement on media relationships that we cannot understand or fully describe in their collapsed state.

Informational Violence

In his description of *Photosynth*, Aguera y Arcas talks about "taking data from everybody, from the entire collective memory of visually of what the earth looks like and link[ing] all of that together" (Aguera y Arcas). Therefore, the first step in tracing out how habitation works with respect to collapsed artifacts is to examine what happens when our experiences are turned into data that can be shared and distributed in multiple

media under the guise of "collective memory." Although this process seems benign and potentially very useful, the recording of our experiences within city fabrics, the transcoding of a simple walk through a cathedral into images or texts, is in fact a form of informational violence. For Manuel Castells, the term informational describes a "specific form of social organization in which information generation, processing, and transmission become the fundamental resources of productivity and power" (21). This stripping of information from its context while simultaneously expecting that this information to be available in a city's artifacts results is what I call the "informationalization of space." Informationalization is an act of violence where highly detailed maps that contain large quantities of information tells us less and less about culturally specific meanings (Brown 40). There are two different ways to read this "informational violence" and the effects it has on our cities and us. The first follows Jean Baudrillard, who reads violence as detrimental, particularly when it draws on the logic of the spectacle. The second perspective on violence comes from conceptual architect Lebbeus Woods, who takes a more optimistic and hopeful perspective and sees violence as constructive and an opportunity for change. In this section I will use the rhetorical qualities of informationalization and the perspectives of Baudrillard and Woods to show the effects informational violence has on our relationship with the city and how it contributes to our understanding of habitation. This discussion of violence will be the foundation for the following section on post-urban inscription practices.

In his essay, "The Violence of the Image," Baudrillard explores three definitions or types of violence. The first type of violence has to do with aggression and physical ruination, while the second type of violence is in the socio-cultural register. For

Baudrillard, the third type of violence, which is what we see happening with *Photosynth*, is both more subtle and yet more damaging than the other two. He writes:

> [T]he violence of deterrence, of consensus and control, of hyperregulation and deregulation altogether — the violence of the virtual, a metaviolence in some way. Violence of forced consensus and interaction, which are like the plastic surgery of the social. Therapeutic, genetic, communicational and informational violence, but, first of all, NEW the violence of transparency, which tend to eradicate, by the way of prophylaxis, of physical and mental regulation, the very roots of evil, of negativity and singularity (including the ultimate form of singularity, which is death itself). (Baudrillard)

Baudrillard goes on to say that we should go even farther than the term violence, and instead should opt for the term "virulence" to describe the sneaky and coercive properties of images and media more generally today, and their spectacular qualities. The violence Baudrillard describes is easy to see in relation to different media, but how does recognizing violence with respect to spatial rhetoric help us to see the shortcomings of collapsed media artifacts? And, how does this recognition help us to see how we might use such violence to our advantage? For Baudrillard, we are unaccustomed to dealing with this third type of violence, one that does not cause the destruction of a physical and cultural artifact such as the NDC, but a type of violence that takes the form of an artifact all the while concealing its affordances and constraints and its persuasive effects behind the easiness and smoothness of a blended approach to media.

This problem occurs with *Photosynth* when we assume that through the conflux of multiple media we are able to understand an artifact completely thereby abstracting it into decontextualized information. "Where there are problems with information," write John Seely Brown and Paul Duguid, "the solution offered is usually add more. The history of documents and communities points in the other direction—toward less information, more

context" (202). Baudrillard agrees when at the end of his essay he writes, "We usually believe that every additional dimension is a plus, but on the contrary, every additional dimension annihilates the former ones in their singularity" (Baudrillard). I will not go so far to say that additional dimensions, additional media, annihilate or erase previous ones. In fact, we can counteract this collapsed condition by extruding an artifact into its iterations. The refiguring and remediating that happens when we consider older iterations in the light of newer ones can be particularly informative and eye-opening. It allows us to consider any changes to what the city is asking of us based on the medium in which we encounter it. For example, the Visual Iteration makes us think that we understand the Physical Iteration completely by presuming to show us the full and complete 3D model of a space. This assumption is challenged when we remember that *Photosynth* is based on occurrences of "photo paths," which are when tourists' photographs cluster along similar perspectives. Inherent in this construction are other paths, other perspectives, that go under-viewed or under-photographed, or perhaps are not photographed at all. What this means is that whole sections of an artifact may go undocumented visually and will therefore essentially cease to exist in the Visual Iteration. We therefore need to recognize that each medium carries its own opportunities and limits for recording experiential information.

The potential for the erasure of physical and cultural components of an artifact during the transfer from one medium to another parallels what Woods identifies as the damage that is done to meaning during postwar rebuilding efforts. Aleksandra Wagner describes Woods' work thus:

> By naming destruction an inescapable beginning of all construction, a necessary yet effectively repressed platform of the ideology of progress,

> one has to realize that what is of interest are not the objects destroyed, but the inability or impossibility to see the world differently without destroying them. (10)

The notion of creative destruction that Woods develops is aimed at redefining and thereby re-inhabiting a damaged space but by no means trying to simply recreate the space *as it once was*. Woods is very much against the idea that following some violent act—be it bombs or camera flash—any space can be truly rebuilt. Instead it can only be a shadow of its former self.

What are we currently doing with all of this information and media? John Guillory argues that the largest percentage of communication done today is simply meant to "transmit information." That information, writes Guillory, "has a shelf life, a momentary value that drives the development of our information technologies in their quest to speed up, economize, and maximize the effectiveness of transmission" (110). He contends that the unique quality of this type of communication is persistence after transmission, when the information, now stripped of context and its kairotic moment, is filed away. He writes: "But however vanishingly ephemeral its interest, it must nonetheless be preserved, that is, *filed*. It must stand forever at the ready in its stored form, to be consulted if desired by some hypothetical future reader" (Guillory 113). Similarly, Matthew Kirschenbaum says as much in his work on the material qualities of digital technologies, when books, or just about anything else, are "filed away in the closed stacks…until such time when—*if*—they are needed" (100). And yet, despite the fact that this process of digital archiving is now commonplace, Kirschenbaum observers that we still feel more comfortable when we practice redundancy across our media such that a digital copy of an email may be great, but we feel safer knowing that it has been

printed and that hardcopy has been filed away as a backup in the event of some catastrophic data loss (97). *Photosynth* demonstrates an *informationalization of space*: the transcoding and "filing away" of meaning from culturally important sites, and in the case of synths the sites themselves! This process of filing experiences away and the anticipation of access is a common instance of violence among the Physical, Visual, and Informational Iterations as they stand available for us to (re)experience them. Through this informational violence we feel that we can let go of our memories, that they will always be available to be downloaded and rebooted. This assumption pushes Marshall McLuhan's concept of media serving as the extensions of humanity to its extreme. Now we barely register experiences before transcoding them, filing them away, and turning to the next space, medium, or experience.

Michael Hobart and Zachary Schiffman note a turn to logical, informational rules that have come to define multimedia relationships. They write:

> In contrast to the previous ages [of information], substance has vanished entirely from information. Our information technology stakes out a realm in which meaning or content—what earlier ages had abstracted from experience, shaped or formed as information, and understood as contained in memory—is replaced by logical rules. We have drawn the information idiom so far away from the immediacy of experience that no content whatsoever is retained in its digital symbols. (203)

This begs the question, how will meaning be located, and who/what will generate it, in the tension between two or more iterations of a space? Alexander Galloway and Eugene Thacker note that with respect to the production of meaning "it only ever exists as the threshold of mixtures between two or more technologies…There is no content; there is only data and other data" (145). And yet, "It's not pure information alone," write Brown and Duguid, "but the way the information was produced that supports

interpretation…documents are not indifferent to the information they carry. They help shape it and, in the process, help shape its readership" (185). From this emphasis on assistance that Brown and Duguid discuss, we are led to believe that we are intimately connected to this data after the violent act of informational transcoding. With respect to the algorithmic suturing that occurs when a space is synthed, the presence of people complicates or even makes the picture unusable: when synthing, only the abstract and empty spaces are of interest because only then is it possible to match images through their overlaps. In the process of informationalizing the experiential data of cultural sites, synths dismantle, remap, and reconstruct physical spaces. In the same moment, it is the act of translation, the violence of informationalization, which produces new in-between spaces that are both empty of meaning but are open to the discovery of new interpretations and affordances. Similarly, when we look at Woods's designs of post-violent space they only rarely contain people. "In the realm of the social sciences," he says, "space is usually discussed in terms of the human presence within it. In the field of architecture, however, it is the abstract qualities of spaces that are stressed…[as] architects are the specialists in the formation of these qualities" (Woods *Radical* 23). In contrast, we know from Rhetoric and Composition scholarship that situated and contextual affordances are crucial to understanding our roles in a space, particularly so when multiple media spaces are coming together.

However, the storage of data proposed by *Photosynth* and other multimedia programs and apps is an information dump, and just amassing information is not enough because it does little to inform us about how to act in, with, or against that information. Lev Manovich asks, "How can our new abilities to store vast amounts of data, to

automatically classify, index, link, search, and instantly retrieve it, lead to new kinds of narratives?" (237). In short, we now have the ability to produce and store massive quantities of information, now what do we do with it? For one answer we can turn again to Woods. Much of Woods's work focuses on the reconstruction and internationalism of the post-WW II period and provides a framework with languages and interventions for how our perspective of seemingly redundant iterations can provide us with new opportunities for generating meaning differently. "It is natural to want to erase the memories of tragedy and loss," writes Woods, "[t]hat was the goal of the early modernists, who faced the task of rebuilding an intellectually bankrupt and war-devastated culture" (*Pamphlet* 10). Buildings and spaces, he asserts, once the victims of violence cannot be reconstituted, and it is plain to see that the rebuilding done in the war's aftermath failed to capture the complexity that the cities had produced naturally over centuries. Ornate, stately, and sometimes hodgepodge buildings and streets that were damaged in the fighting were rebuilt as gestures or echoes of their former selves. The modernists' efforts served only to short-circuit the spaces by turning them into monuments to their former existence, and they "embarked on a war of their own, employing the violence of urban renewal against the chaos of the old cities" (Woods *Pamphlet* 10). The acts of violence the modernists were responding to fall into Baudrillard's first and second definitions, physical and socio-cultural violence, and these modernist designers took the violence of the postwar period as the opportunity to reprogram their cites in highly determined ways. Overcome by the instability of postwar spaces, these architects and planners attempted to re-inscribe their war-torn landscapes as

the colorful milieu of their former vibrant cities in the hopes of creating spaces that would be safe, familiar, and free from the threat of violence of any kind.

Unfortunately, by attempting to concretize the shadows of the old buildings, these designers remained anchored in the past as they transformed these spaces into spectacles of themselves, thereby unwittingly enacting the third type of violence—the spectacular or the informational—and this is what we see with *Photosynth*. Similarly, with *Photosynth*, once a space such as the NDC has been transcoded from experiences (haptic, visual, aural, etc.) into information, the urge is to see the resulting synth as "an exact copy of the NDC," or worse, "the NDC, only better." Such a move does exactly what Woods is warning against: it leads us to believe that a replica can replace the original. This presumption leaves us vulnerable to being exploited when we do not fully recognize how different media or spaces are persuading us to act. The informationalization of space is built on a reversal in storage directionality brought about by the multimedia conditions of our cities that position physical spaces as something more than simply containers of memories and meaning, but something less than contexts distinct from the databases that house digital information about them. Indeed, physical space has become an informational storage medium through augmented reality and the embedding of data in the spatial interface of *Photosynth*. Its operational logics need to be redefined to accommodate the shift in how we understand the location of information and of our experiences as well as how we access them.

Essentially, both Manovich and Woods are asking the same question: how do new spatial forms lead to new models of habitation? To ground this questioning in an example, we again can return to *Photosynth's* goal of mimicking spaces in different

media. Woods argues that the modernists' goal for spatial design possessed a counterintuitive notion whereby spaces are protected against further violent activities—against uses or programs other than those they were designed for—if their capacity for the containment of a variety of activities is increased. In the case of *Photosynth,* we see this same idea arise when the tool's capacity for the inclusion of different iterations / different types of media in a synth is expanded with the hopes of increasing the longevity and accessibility of our (collective) memories in/of cities. "Increasingly," writes Woods, "the design of space is today spoken of in terms of 'flexibility.' The lecture space might become a space for song recitals, after all. But only 'might.' No one knows for sure" (Woods *Radical* 25). For Woods, the design practices of built spaces today continue to follow the modernists' program and trend toward a lack of inscription, which produce only the skeleton of a structure (picture the big box warehouse stores that are capable of accommodating any type of business) and therefore only the vaguest of outlines for how we are supposed to act in those spaces. Too much programmatic malleability results in spaces of indecision, and for Woods, the meaningless and flexible spaces that attempt to be too many things at once are everywhere today:

> Now people find themselves with *an infinitude of space*…from cyberspace to outer space, from suburban living rooms to vacant acres of the South Bronx—that cannot be filled with meaning by the traditional productions or contemporary products of science and art. (Woods *Radical* 24-5, emphasis added)

The blanker and more flexible the space, so the logic goes, the greater the capacity for inscription—the methods we use to process and come to understand our experiences—then the less likely we will be to attempt a type of inscription that a given space cannot

accommodate, which therefore decreases the possibility of any sort of spatial violence be it physical destruction or media transcoding.

We see a similar intention with the synth of the NDC. Here the freedom to tether large quantities of information to the Visual Iteration has become an expectation, but an expectation of what? We have so much flexibility with how we informationalize our experiences in a synth, but the space of the synth does not give us any clues in return about how we are to act in the space between its iterations. For example the Visual and Informational Iterations of the NDC provide us with vast amounts of information from all manner of media but they cannot provide us with a context in which to use this information. This lack of context is similar to the assumption about flexibility that Woods is arguing against in his work. In *Photosynth* and other such artifacts, the fact that they are constituted from a variety of media sources and the collapsing of these media is where we see an attempt to make space programmatically flexible because it already encompasses so many different media. *Photosynth* urges us to understand our habitation of synths as the ability to inscribe in and possess a similar infinitude of spaces.

Similarly, Baudrillard's third type of violence also describes a programmatic flexibility through the conjoining of expressive media. He writes:

> To become an image, one has to give a visual object of his whole everyday life, of his possibilities, of his feelings and desires. He has to keep no secrets and to interact permanently. Just here is the deepest violence, a violence done to the deepest core, to the hard core of the individual. And at the same time to the language, because it also loses its symbolic originality—being nothing more than the operator of visibility. (Baudrillard)

But is this the best way to describe the violence of *Photosynth*? While I agree with Baudrillard's contention that this third type is the "violence of transparency," my

argument is that "informational violence" is at its core about persuading us to ignore what the different media of a city are asking of us. Transparency is built on the destruction of mystery, the elimination of the individual and the novel sensations from artifacts because they have become wedded to the data and information that has traditionally not been available as part of a first-person experience. By first-person experience, I mean the highly individual and never repeatable path that we follow when we engage with the various aspects of a city-artifact. Unlike the photo paths of *Photosynth*, first-person experiences are individuated and can never be fully or adequately cataloged. The assumption that we can do so is the hallmark of informational violence. The violent act that is part of a synth is not the digitizing of artifacts or the suturing of 3D models. Instead violence comes from *informationally extending an artifact*, the attempted storing of information about the culturally significant physical spaces and objects like the NDC. Through this type of storage we believe that we are rebuilding these artifacts while also enhancing them with the "informational richness" of other media. The methods we use to rebuild them expose our rhetorical efforts, our act of inscription, for reweaving city fabrics and city narratives, which provide us new perspectives on what it means to inhabit the city.

Models of Inscription: On, Over, In

When Aguera y Arcas contends that *Photosynth* is about "enriching spaces," he is actually making that claim through the reconstructive potential of 3D modeling. In such a model, a city's artifacts—its spaces *and* objects—are deepened with site-specific information and links to other related artifacts that are not, and usually cannot be,

physically connected. However, when we consider that we now understand the enrichment of a synth and multimedia more generally to be informational violence, and we therefore need to reexamine the relationship between what this violence means and the inscription practices we use to produce it. Our acts of inscription, whether they are through (digital) photographs, (digital) annotations, (digital) narratives, or other forms of spatial, emotional, or social composition, are the processes through which we interpret and work to understand our surroundings and our place in the world. Inscription locks in a set of conditions, however temporary its meaning may be, and the types of inscription that we see in *Photosynth* and other collapsed artifacts are able to persist well after the physical conditions have past (Marback "Detroit"). But the photographs upon which *Photosynth* is built do more than simply position the city as a text. We are, after all, living in it and not just reading, analyzing, or producing it. Inscription powerfully affects the social construction of a city, but it also foundational for the material construction of a city as well. In other words, it is through inscription practices that we come to inhabit spaces, and the methods we use greatly impact how we situate ourselves in these spaces. Due to the iterative nature of post-urban artifacts, inscription is not a singular practice. By examining the iterations of the synth of the NDC, and the different models of inscription that each iteration possesses, we can parse out the language necessary for re-narrating the post-urban city and for being more mindful about the informational violence of collapsed and multimedia artifacts. Habitation takes on new forms with respect to collapsed artifacts when we draw apart their iterations and consider the different models for inscriptions that their many media afford us.

On: The Physical Iteration

To introduce the first model of inscription for collapsed artifacts let us begin with a simple question: how do we typically think of inscription? For example, consider the NDC's Physical Iteration, or any built space for that matter, where humans have written or carved something onto the surface of space. These might be sanctioned like the busts that adorn the cathedral or unsanctioned like graffiti or posters. We could also argue that nature herself through the erosive properties of wind, rain, and ice also leaves her mark. These forces, too, inscribe on our spaces. The benefit (and also the limitation) of explaining inscription as a practice that is done "on" things, however, is that it positions our substrate as a canvas, something planar and two-dimensional with a reduced or nonexistent amount of reactivity, as simply a receiver. Such a view positions inscription as *surface work*, which means that we inscribe "on" things with materials that are similar to a given surface: we write on paper with words made of ink, we write on our computers with words made of code, and we write on our walls with words made of paint. The "on" model of inscription leads to using these canvases to contextualize and contain our experiences, and in this way artifacts become simply the summation of their various canvases. It is interesting to note that we see a similar type of inscription in the Visual Iteration where now that this artifact has been sutured together it becomes a collection of photographic planes and surfaces. This is curious because it is using a two-dimensional approach of inscription to map and reconstruct a three-dimensional space. In this way the space in the Physical Iteration has become an empty shell in the Visual Iteration. The "on" model gives us no tools or language to describe an interior space or what exists *behind* these surfaces.

The limited inscription practices of the "on" model can be seen across the media spectrum where our descriptions of spaces determine the range of actions we can perform in them. For example, for Woods, the emptiness of physically damaged spaces marks the opportunity for new types of habitation and meaning making in the *in-between* spaces, the "freespaces," that both spatially and temporally separate the damaged and the replacement spaces (Woods *Radical* 16). Similarly, in calling for an oneiric or dream space, Gaston Bachelard calls for a type of space with a unique model of inscription, and likewise a type of habitation, that fills in the gaps rather than a space and type of habitation that rely on completed forms and determined practices. The act of remembering, in a freespace, is structured such that our memories of the past do not dictate our actions in the present. However, these freespaces, in their invitation to "inhabit the gap," are still part of the "on" model, insofar as they are once again containers, albeit ones that could only have emerged once the dominant form was fractured or destroyed, but containers nonetheless. In the "on" model, we remember the past experiences of a space by acknowledging and living on the results of the violence done to it, regardless of whether the violence is physical, social, informational, or some combination of the three.

Inscribing "on" does not lead directly to informational violence in the same the ways that other models do, however, it does not provide us with ways for dealing with informational violence either since we can only inscribe on a surface with a like medium: physical on physical, digital on digital, etc. We are, therefore, unprepared to deal with full range of media that make up collapsed artifacts. What other options are available to us now that physical and digital media exist in such close, and often-contentious

proximity? What other models of inscription can we find for helping us to construct languages that are appropriate to the media that are colliding in today's environments without collapsing them into a singular model of practice?

Over: The Visual Iteration

To introduce the second model of inscription, the "over" model, I want to describe briefly an experience I had while working on a drawing of a still-life in college. I spent a great deal of time focusing on a bright white seashell, and after awhile my professor came over and commented on how well the seashell's bright tone had helped me rework the contrast in the rest of the drawing. He then promptly plucked the shell out of my still-life and took it away. I was left with a better drawing over all (the composition was better without it) but I had a hole to fill. I now had the difficult task of drawing over the bright white object in my composition so that it would match the still-life, but I also had the need to reconsider my understanding of the composition process more generally in light of the fact that objects can be added and subtracted at will. There is a similar experience for writers and specifically for teachers of writing. We tell our students that writing is a thought process and encourage them to think *through* the practice of writing. It is not an uncommon experience for writers to write for pages as a means of generating some new connection or idea only to pluck out, throw away, or erase the pages that got them there in the first place. Adding information "on" an artifact changes how we perceive it because it changes the surface and the structure and our method of interaction. By the same logic, the removal of an artifact can equally create "ah-ha" moments that dramatically and suddenly shifts our perspective so that we understand the relationships between the remaining artifacts in a new light and engage with them differently.

Practices of over-inscription remove an artifact from its surroundings and its ecologies. The "over" model has to do with replacement at minimum, and when pushed to an extreme, it demonstrates the complete erasure of the media and artifacts that came before. Despite the deep interest today in hybrid spaces that combine physical and digital media there are still persistent assumptions about the either/or nature of this relationship. For example, Diana Saco, using Foucault's work on heterotopias, argues that a digital space is a "countersite that challenges the normalizing ordering of the spaces to which it relates" (xxv). The "over" model of inscription challenges the privileged status of physical space as the medium by which all others are to be judged. This privileging is the assumption that for digital spaces to "work" they need to function like physical spaces, and also that we judge digital spaces by the rubrics and grammars we have retained from physical spaces. To challenge physical space means that we are able to identify digital spaces as "other" or radical spaces. This argument by Saco, as well as those by Leonie Sandercock, Edward Soja, and other postmodern scholars, is valuable for testing and expanding upon how people interact with the spaces they encounter, and there is merit in such destabilizing practices. However, this positioning of "normal" and "other" means that when we inhabit one type of space we are ignoring any other space that may be available at the same time. We are, therefore, inscribing over one space with another in a ways that sidestep how these spaces are informing one another and ultimately affecting us.

We see examples of the "over" model in descriptions of the synth of NDC that present it as a way of revisiting the cathedral site, now in the more robust and informationally dense conditions of the synth. With the Visual Iteration, the "over" model

changes what habitation means in a space since we are told that we cannot just re-experience but also re-visit it. The danger here is that when we feel comfortable replacing one medium (the Physical Iteration) with others (the Visual or Informational Iterations) we are simply reinforcing the cyber-ed space of the late 20th century. In this perspective, spaces are fundamentally distinct from one another and are capable of inscribing over or canceling out other spaces. This type of inscription also leads to value judgments about which media, which iterations of artifacts are "better" or "worse" in a general sense that overshadows appropriateness for a given situation.

In: The Informational Iteration

In 2000, GPS data became open and available in the US and made location-aware devices accessible to the public (Townsend 347). Such location awareness meant that practices for augmenting space could now enter the public domain. Annotative practices involving combinations of media such as stickers and cellphones were happening prior to 2000, but today devices such as camera-equipped smartphones with augmented reality apps make annotative practices readily available that further blur the physical/digital boundaries.[4] Despite the introduction of electronic media such as cellphones with cameras that tether information to a particular physical artifact using mixed realities, or RFID chips embedded in household items, we are continuing to use the language of "overlayment" to describe our acts of inscription, which is a holdover from both the "on" and the "over" models. This language is no longer sufficient given the complexity of the multimedia conditions of our cities. Further, such language also unnecessarily restricts the affordances of this model of inscription. Instead, this model, which I am calling the

[4] There are multiple terms used to describe the sort of annotation I am exploring here. Here is a lengthy, but by no means exhaustive, list: geospatial web, geoweb, geo-annotation, locative media, geocaching, location aware, soft augmentation, content-aware technologies, augmented space.

"in" model gives us new tools of language for describing our cities and therefore new ways of inhabiting them.

While the "on" model of inscription only marginally deals with informational violence because it is based on the singular media of surface work, and the "over" model uses informational violence to replace one medium with another, the "in" model of inscription is an active demonstration of informational violence because it actually locates data *inside* artifacts. The transition from inscribing "on" to inscribing "in" an artifact is a rather recent development. Eric Kluitenberg writes:

> [T]he built environment has been saturated with information for centuries—from signage to adverts. The overlaying of new electronic media, however, produces a less stable topography that is both uneven and in ceaseless flux. (Kluitenberg in Crang and Graham 792)

And yet, when describing built environments, Kluitenberg and Crang and Graham position information as something that continues to be overlaid or placed "on" the walls and buildings. Despite the mass introduction of augmented and mixed realities, we still use the language of the "on" model and therefore the expectations and limitations of that model as well. Therefore, we are underprepared for the appeals that this model is making of us.

And yet, there is still a sense of ephemerality that can be especially frustrating in the traditionally paper-based spaces of offices and libraries that rely on the "on" model or cyberspaces that depend on the "over" model. Brown and Duguid note, "[T]he sense that the information is 'there' somewhere, but can't be found can drive anyone to digitize," to translate physical material and information into digital formats (179). Practices similar to those described by Guillory and Brown and Duguid are occurring in the context of the city in the form of urban annotations that relay location-based information about its

spaces. In the context of the city, however, while this "filing away" affords new opportunities, it also raises questions about the relationship between physical contexts and digital contents. Most discussions of the hybridizing of spaces focus on the transference of physical information into digital formats for long-distance activities: telecommuting, telepresence, television, etc. With a technology such as *Photosynth*, however, the physical to digital directionality—the storage of physical spaces and activities into digital spaces—is reversed and becomes one in which digital information and spaces actually become stored *in* physical artifacts. Drew Hemment describes this sort of annotation as a way of "making data geographically specific or placing a digital object *in* space" (350), which in turn produces a reversal in the directionality of information storage. But Hemment's use of "in" here is actually more inline with the "on" modal than the "in" model and is still subjected to the same assumption that space is always a container. Malcolm McCullough counters this preference for containment with the notion of embedding. He writes, "When the technological means increasingly embed physical computing into elements of buildings, these newer subjects of design become part of what we already know as architecture" (189). Changing models of inscription from "on" to "in" to match our usage of our media means changing both our language structures for how we engage with city artifacts, but it also means changing our rhetorical approaches to how we critique and understand the ways that those same artifacts persuade, encourage, and challenge us. As we explore and sift through the information, as we add tags and recombine, as we enter into conversations *across* these different media, we begin to produce new practices that allow us to inhabit *between* the different iterations available to us.

As a way of illustrating the “in” model, consider putting a physical object in a physical box. The box itself contains a void that becomes filled with the object. Although the object is placed “within” the box, the box is still understood as a container made of surfaces and therefore as part of the “on” model. If we look at the “in” model of inscription instead, we see a different perspective when we consider embedding digital information into a physical object. We must first let go of our assumption that we can see inside of the object since to do so would mean dismantling the object in some way, a process, that would only and always produce more surfaces, more opportunities for inscription to happen “on.” In contrast, the "in" model takes advantage of the dimensional qualities unique to different media, so that even though we cannot physically see or pinpoint where inscription takes place, it is still "in" an object. This model is very similar to the ways we embed memories in objects and photographs that have particular emotional or sentimental value. This does not mean that digital objects are *next to* physical objects in space, not does it mean that our memories are somehow overlaid on the physical object or that they replace the object. Instead, the digital objects and data are literally *in* physical artifacts, they are stored in the physical world in the same way that our personal memories and emotions are embedded “in” an object that used to belong to a loved one.

As we saw in the final remarks of Aguera y Arcas’s TED talk, synth technology is based on the assumption that data is collectively accessible, changeable and endlessly enrich-able through the use of metadata, tags, and a database aesthetic. The tags and metadata of the Informational Iteration are ways to label, define, and catalog information in a database. Embedding information with the “in” model of inscription is particularly

generative in mixed realities because since data can have multiple tags and belong to many datasets, it allows for the proliferation of combinations beyond the limit of physical spaces. Fredric Jameson's cognitive mapping, for example, occurs when experiences cannot be understood or mapped with a linear model or through a temporal framework, because "space…has finally succeeded in transcending the capacities of the individual human body to locate itself" (44). Instead, he proposes a spatial, cognitive understanding of experience: "to enable a situational representation on the part of the individual subject to that vaster and properly unrepresentable totality" (51). Similarly, Crang and Graham write:

> The effect of memory is not the creation of perfectly known environments. Rather, it involves a destabilization of spaces, a haunting of place with absent others. The double, indeed triple and quadruple, coding of spaces and people through narratives and information carried in digital networks may thus actually serve to disperse our notion of both person and place. (812)

The multiple codings that Crang and Graham describe amount to a destabilizing of a city's artifacts as a result of their being informationalized and undergoing one or often many instances of informational violence. This destabilization, as demonstrated by the informational violence of *Photosynth*, holds the possibility for what Woods describes as the "intricate constructions of similar tectonic elements, like the shards of some vast and exploded whole, reassembled not as an object, but as a potentially infinite number of synthetic landscapes" (Woods *The Storm* 41). The challenge now becomes putting the inscription practices of the Physical, Visual, and Informational Iterations in conversation with each other in our daily lives in order to generate new practices for habitation not just "on" or "over" but also "in" the different iterations of a city's artifacts that are combinations of all three.

Obsolescent Citizenship

At the end of the 20th century, Ben Russell described the effects that cellphones were just then beginning to have on the built environment. He writes, "What was once the sole preserve of builders, architects and engineers falls into the hands of everyone: the ability to shape and organize the real world and real space" (4). The informationalizing of physical spaces carries with it the potential for us to take advantage of the expansive collective memory of multimedia city fabrics, if done mindfully, and use it inform how we participate in affecting our spaces. This expansive memory reaches back in time with great depth and breadth and leads to a type of participation called "obsolescent citizenship." This mode of citizenship is defined by the ability of individuals, through the differently mediated iterations of their artifacts, to create and encounter moments, spaces, and conditions that conflict with the present physical situation. With collapsed media we are able to use any and all of the models of inscription—on, over, and in—to bring different moments of a space into conversation with one another. In this way, previous conditions of an artifact come to inform our current citizenship practices by adding a deeply temporal element to what it means to be a responsible citizen today.

For example, one semester during my graduate work, the university tore down a building across the street from my office. During that semester, between grading papers or writing, I would watch the machines slowly eat the building until nothing but a flat surface remained. This corner lot is now a small green space with walking paths, benches, and grass. The sometimes curious, sometimes frustrating thing about universities is the quick turnover and rapid loss of collective memory because the student body, much of the space's population, is temporary. Students who are new to the

university after the building has been taken down will have no memory of this building or its place in the fabric of the university and the city. This situation follows the "on" model where inscription takes place between like media. In this case, what was inscribed and ultimately erased was a physical building on the physical fabric of the city. In this inscription model, once something has been erased, it is likely gone for good, particularly when the largest population who might remember it is so transient.

But why do we care? What is the value of remembering such a building? It was, to the best of my knowledge, empty and a bit of an eyesore. Why would we want to remember it? Memory in cities is a powerful thing for understanding what changes we might want to make and why. John Forester argues that creating the conditions that fosters a city's inhabitants to assess, deliberate, and decide on how to shape their space is crucial for keeping a city vibrant and alive. Forester writes:

> To understand participatory and deliberative encounters as social and political ritual performances means coming to see these as organized forms of presenting and exploring value rather than as going through meaningless motions, as forms thus connecting past memory and obligation to future strategy and possibility, and far more. Far from being empty containers in which dialogue takes place, these deliberative rituals are laboratories, if not cauldrons, of political judgment. (130-1)

Change becomes possible when the conflux of historic building, significant events, and multimedia inscription practices create the conditions for obsolescent citizenship. By taking advantage of the multifaceted nature of collapsed media we can engage in collective deliberation about how our spaces used to be, how they are now, and what we want them to be like in the future.

How does the multimedia condition of cities help us to respond to the need and the desire to remember what came before? To answer this question, let me describe

another experience I had with the relationship between memory and the fabric of a city. On a recent visit to Ann Arbor, Michigan, while walking through the downtown area, I came across large plexiglass panels with scenes painted on them that were somewhere between photographs and line drawings. There were two brass feet sunk in the concrete in front of the panels and if you stand on them the image on the plexiglass would overlap with the physical buildings, sidewalk, in street beyond. This sort of perspective allows the viewer to see and get a hint of what the space looked like in the past. Now, this is still an instance of the "on" model (inscription through like media), but it also has qualities of the "over" model as well. This image of the city fabric from the past is presented *over* the present day construction of the same place in that fabric. We are not likely to relive or re-experience the space as it was through an image on a piece of plexi. However, gazing through this window into the past does stimulate the viewer's post-urban imagination. What was it like back then? How did it feel? While the image does not propose any answers to these questions, it does give us the opportunity to wonder and fantasize by presenting us with an inscription of this same space written over our current environment.

Hemment notes that through embedded media, "The person becomes a kind of 'cursor' navigating digital media located in the world" (350). With *Photosynth* and other artifacts that have many media interacting at the same time, we do in fact become the cursor that is exploring this new space as both a storage and as an inscription device. Similarly, Townsend writes, "The implication of these tagging systems is that they offer powerful ways to let groups write alternative classifications of places and objects in the urban environment" (347). Indeed, the informationalization, storage, and recovery of urban experiences form an *informational cartography* of the cities, a three-dimensional

mapping that moves backwards through time. This new form exposes and allows us to interrogate the impacts that informational violence has on the relationship between technologies, cities, and their inhabitants. These cartographies create a new type of architectural space that all of us, through our multimedia inscription practices help to generate.

When we are exposed to iterations that come from different moments in an artifact's life, from different times in its existence, we are experiencing the defining characteristic of "obsolescent citizenship." Citizenship, in its many forms, arises out of the conditions that are presented to us in each situation. In the case of the torn down building and the plexiglass streets, we are exposed to conditions that are no longer available. Through this exposure we are asked to participate in ways that do not exactly line up with the present conditions of our artifact. It is through these temporal and spatial contradictions that give us the perspective from which to properly assess our current conditions and decide how to move forward. Only by drawing the media of collapsed artifacts apart and tracing out how they have allowed us to inscribe on, over, and in cities can we take full advantage of our places in the life of our cities.

Chapter 3: On-Demand Artifacts

On-Demand Artifact: 3D Printing

The perfect is the enemy of the good.
— Voltaire

In the summer of 2011 Bre Pettis, a DIY enthusiast and self-described "maker," appeared on the *Colbert Report*, a show that combines politics, current events, and comedy aimed at 20-30 year olds (Pettis). Pettis was being interviewed about his company, MakerBot Industries, which makes small-scale and affordable 3D printers ($2,400 fully assembled, or $1,099 assembly required). Often compared with ink-jet printers, 3D printers lay down a bead of material from a constantly expanding list that currently includes plastic, glass, metal, even certain foodstuffs among many others; basically, anything that can be "squirted" (Mota 281). 3D printers can move along all three axes, and as such they build up layers of materials until they produce three-dimensional objects with an impressive degree of precision. In other words, where carving, whether with a chisel or a laser, involves the removal of material to create a desired form, 3D printing is an additive process that produces little to no waste. Even though this technology is still relatively new, only a few decades, the bar for entry—access to the machines, modeling software, and the expertise needed to run them—has gotten substantially lower in recent years (Gershenfeld).

As the bar for entry into 3D printing is lowered, the projects that are surfacing as examples of this technology's capabilities range from humble to quirky to practical and are available for people without specialized backgrounds. For example, one instance of 3D printing that Pettis mentions in his interview is when he describes making—read here

printing—new shower curtain rings rather than going to the store and buying them (Pettis). While this example is not as flashy as, say, printing a new jawbone for a patient with an incurable infection ("83-year-old"), it does highlight the practical nature of this technology on a daily basis for people to shape and reshape their environments. However, beyond just environmental customization, 3D printing has intimate ties to both the multimedia fabric of today's cities and to the rhetorical implications of these fabrics. It is easy to see how the ability to modify a space with truly customized objects at a rapid pace would be highly desired. However, where we must take care to reflect on how a technology that affords us such speed and perfect customization affects our expectations of the city in all its different media. Exploring this drive for perfection is the goal of this chapter.

I will frame the following discussion about 3D printing in the city by looking at the current wave of do-it-yourself (DIY) culture. There is a close relationship between this technology (3D printing) and this culture/aesthetic (DIY) since most non-professional and noncommercial printing is done by people who fall into the DIY or weekend warrior camps. That said, much of this chapter will be focused on complicating the relationship between this technology and this culture in order to expose how the potential for real-time production of objects leads us to believe not only in a further collapse between the times and spaces of our cities but also in an assumption that we do not need to fully participate in this personalization. The current wave of DIY culture is based on two related convictions. The first is that when something breaks rather than going out to buy a new one, we should make our own repairs and/or replacements. Equally important to the DIY culture is the promise that (re)designing happens not just

when objects physically break, but also when objects' designs—the rhetorical logics that inform the development of their shapes and determine our usages of them—are understood to be "broken." Together, these convictions about "broken" objects have a substantial impact on our definition of "craft" and the role that craft plays in our everyday lives.

3D printing technology is at the intersection of physical and digital media and its emphasis on iteration as part of the design process locates it squarely within the post-urban city. 3D printing exists physically in the form of the 3D printer, which can produce three-dimensional objects including replacement parts for itself. 3D printing also operates digitally in the dedicated communities that have emerged to support the exchange of ideas, designs, and good practices. The exchange of virtual models means that users can download and customize designs to fit their specific needs. For example, *Thingiverse* is one of many such forums where DIY-ers can submit, store, and share their 3D designs (*Thingiverse*). Other sites, such as *Shapeways,* allow users to upload a design of an object, select their material—glass, stainless steel, sandstone, or a variety of plastics with prices determined by cubic centimeters of material printed—and these companies will then print a 3D version of the object to specifications and ship it back to the designer/consumer (*Shapeways*). The communities around these sites demonstrate qualities of the post-urban city by bringing together individuals who are working to square their high-tech lifestyles and their interests in more responsible and sustainable relationships with the objects that constitute their daily environments. The iterative nature of 3D printing is the result of the many-to-many condition that arises out of these communities of shared designs. The DIY approach departs from the current model of

"big box" production and consumption where creating one's style means shopping at Target, or where "starting from scratch" means going to Home Depot for 2x4s. Instead doing such work now means identifying a problem, creating a virtual model, and printing a 3D object. Our understanding of the beginning of and our place in the design process has the potential to be radically altered by this technology and the communities that embrace it.

Trouble arises, however, if the expectations of non-investment that we have retained from large-scale, one-to-many models of production are transferred to 3D printing. The speed of cities today leads to expectations and demands for newness and replaceability at an ever-increasing rate. It is not hard to see 3D printing as being the answer to real-time objects, which require little or no thought from the people who will be using them. But this technology is not the replicator that we saw on *Star Trek* where objects appeared out of thin air. Our demand comes at a price, and that price is a deeper relationship with and appreciation for the ways objects contribute to our daily lives. The curious and liminal nature of 3D printing is that it exists decidedly within separate media iterations. And yet, it also operates *across* these media at the same time making it the perfect fit for the final example of post-urban artifacts. Because of the increasing availability of 3D printing, questions about and practices of design are now, more than ever, becoming necessarily familiar topics for non-specialists. Iteration, the trial-and-error process for cultivating knowledge, plays a major role in the design process. As I will show in this chapter, the affordances of 3D printing provide an iterative perspective that allows us to revisit the role of rhetoric in the post-urban condition. With this in mind, the discussion of 3D printing technology and DIY culture and aesthetics will be based on

several 3D printing projects. Through these examples I will show the place of "on-demand artifacts" in our post-urban fabrics and how they can provide us further insight into the shape of our cities today.

The Demand of the Urban City

The urban city is defined by speed: the speed of connection, of communication, and of commerce, and the speed of information and of our own mobility. The assumption with this sort of speed is that information and objects are available on demand and in real-time. We have come to expect that through the intermingling of different media our spaces and objects will be available at own request (Virilio). At first blush, 3D printing seems only to exacerbate this urban "need for speed" by making possible with physical objects what we currently have with digital communications. We see a technology that can print a functional crescent wrench made of metal given only a few hours. We see objects that seem to teleport through space and time from one physical location to another (Dash). Unlike other handmade artifacts, the outcomes of 3D printing usually get more attention that the design processes. This is unfortunate because there is much more to the practices of printing than simply the additive layering of materials. Exposing the relationships between these practices and the media in which they take place give us great insight into what we expect from our objects and spaces. How are these objects being created, manipulated, and adapted? To what demands are these objects, both the virtual versions and the printed ones, responding? And, equally, how are we responding to them?

Cities have always served as the contexts in which goods and ideas were exchanged and communities were formed. These contexts have become complicated by

the current relationships between different media and spaces and the unique persuasive pull of each. Today's models of exchange run counter to the expectations from even two decades ago about how long-distance communication technologies would virtually connect but physically disconnect us from the ways we lived and worked. In fact, our connections to physical media and spaces persist as location-aware technologies grow more prevalent. The repopulation of post-industrial cities presents us with an amazing opportunity to rebuild and take stock of our situations as we work to reconstruct what it means to live together in cities, both locally and globally, and physically and digitally. Ash Amin and Nigel Thrift refer to the current perspective on cities and their places in global exchange as a "new localism," which, they write has great potential: "It allows practitioners to reassure local and national communities that prosperity and economic security remains possible in a borderless world: globalization can be an opportunity" (55). Yet such localism only survives and flourishes when there is competition between cities at a global scale and an understanding that cities will provide the locus for knowledge economies (Amin and Thrift 56). Developing new narratives for how we operate in cities is a necessity in most post-industrial cities, especially those located in America's "Rust Belt," which have had to deal with massive depopulation as well as unused and unmaintained infrastructures, and the loss of jobs, industries, and populations. The best way to understand this return to city life is from the perspective of manufacturing, which is certainly a legacy from industrial cities, and most post-industrial cities can attribute their decline to a homogeneous manufacturing focus from the beginning to the middle of the 20th century. Traditional, industrial manufacturing

practices provided the pace and quantity of goods that was necessary for such a concentrated and demanding population.

Following World War II, demand in cities had become focused on creating individualism through mass production. Taking a recent example, Christine Harold writes, "Target is at the forefront of a trend in Western capitalism in which aesthetics pervade every aspect of the marketplace," and these aesthetics are no longer limited to an elite class but are now widely available and even expected (603). However, in step with the self-awareness of the "post-," now when individuated consumers are sold design strategies from Target, Walmart, and Home Depot we all recognize, perhaps only subconsciously, the irony of our actions as we reach for a particular dining set that will define our "style" even as it sits among countless other copies on the same shelf. Peter-Paul Verbeek writes:

> Despite all the recent talk about the "material world" and "modern materialism," we have managed to expunge artifacts of their materiality both in our thinking about and in our design of them. Now that we have survived the death of God and the death of the subject, we seem to be faced with the death of the thing. (Verbeek qtd in Harold 609)

Not surprisingly, with the potential to create customized objects at will, the amount of energy we put into thinking about their construction, the consequences they will have on the environment and other communities, and the impacts they will have on our actions diminishes proportionally. This emptying out of what objects do and mean that Verbeek describes seems an obvious conclusion for 3D printing. With the middle men of the big box stores removed from the equation, we believe that we will somehow be freer to make more individual choices about our space because we can print objects to fill them whenever the need arises.

The assumed control of the individual takes the form of "networked individualism," which describes more active and precise ways of connecting with groups based on an individual's needs rather than the connecting through group affiliations and their public social spaces—such as work, school, or religion. Barry Wellman writes:

> The shift to a personalized, wireless world affords truly *personal communities* that supply support, sociability, information and a sense of belonging separately to each individual. It is the individual, and not the household or the group, that is the primary unit of connectivity. (238)

Wellman is describing how mobile technologies such as cellphones and wireless internet shift our place-to-place perspective of communication to one that centers on person-to-person connectivity thereby reducing the contextual nature of community. Place matters less and less when we can contact a person regardless of where they are on the globe. Additionally, the high degree of individualism diminishes the sense of group or spatial affiliations, and we struggle to understand our own identities and roles as well as the identities and roles of other people (Wellman 246). With laser focus, individuals can use digital networks to seek out exactly what they want, but without an appreciation for what they must give in order to receive. Similar to the additive qualities of 3D printing, these networked individuals seemingly waste no time or effort with spaces or communities that they believe will not help them reach their goals.

There is an intimate relationship between the practices we use for exchanging goods and knowledge and the shape of the spaces in which we carry out these practices. Consider digital objects such as programs and operating system updates, which given the increased download and upload speeds in recent years, are accessible and retrievable online. For example, the last time I updated my computer's operating system, I downloaded the latest version from Mac's website, no discs or jump drives required.

However, the production and distribution models for objects have gone largely unchanged and are still seen as bound by the practicalities of making and moving physical objects through space. Physical objects must still be shipped and (usually) assembled before they make their way to the consumer. In other words, digital and physical objects connect us in very different ways, or at least they did until very recently.

3D printing changes how we communicate, connect, and distribute goods and knowledge by making physical objects available through digital channels. This availability redefines the individual's relationship to the different communities in the city as information about objects and indeed physical objects are now transmitted and exchanged digitally. Additionally, this model of exchange becomes the next progression of communication practices that follows the contours of the relationships between manufacturing practices and the role that different media play in cities. There are three models for exchanging goods and knowledge in cities and each presents us with a different argument about how we should use and engage with design, manufacturing, and consumption practice. These practices reflect the shape of our cities. The first model of exchange positions communication between spaces (place-to-place). This model stresses manufacturing at the scale of mass-production and communicates an urban and modern perspective of a one-to-many approach to the city (Dant 12). The second model of exchange locates communication between people (person-to-person), and is the many-to-many approach of networked individualism that still relies on mass production, but now individuals can satisfy their unique demands globally. This person-to-person approach relies on hybridizing the media and spaces of cities. Finally, the third model of exchange that is just on the horizon establishes communication between objects (object-to-object).

In this third model of exchange, we communicate through differently mediated versions of objects in a network-to-network format, which Chris Anderson states signals the next industrial revolution. Object-to-object communication expresses qualities of the post-urban condition because it takes advantage of multiple media an artifact can occur in at the same time and the unique properties of production and distribution of each media.

The notion that cities are now becoming object-centric means that we must attend to our expectations of the object creation processes since they are informing how we relate to the physical and digital elements of our cities. For example, in his description of 3D printing, Michael Weinberg writes that the process is so simple that all an individual has to do is, "Scan a coffee mug with a 3D scanner, send the file to the printer, and print thousands of identical mugs" (2). Likewise, Neil Gershenfeld writes:

> Like the earlier transition from mainframes to PCs, the capabilities of machine tools will become accessible to ordinary people in the form of personal fabricators (PFs). This time around, though, the implications are likely to be even greater because what's being personalized is our physical world of atoms rather than the computer's digital world of bits. (3)

Both Weinberg and Gershenfeld present this new technology as something that is done almost without thought. It promises to grant us supreme control over the physical world. Indeed, there is no shortage of speculation about ease of use and levels of control we can gain with this technology, as we see in cyberpunk novels such as Neal Stephenson's *Diamond Age,* Vernor Vinge's *Rainbows End*, or the replicator from *Star Trek* mentioned earlier. However, 3D printing technology operates at the tension point between hand-making and automation. I use the words tension point here because with the excitement and promise of 3D printing, there is also an unease that reflects our lack of understanding for how it will reposition us with respect to the roles that cities play in our lives.

We cannot have customized physical objects without having direct connections to, and experiences with, the same objects in their digital forms. In the object-centered city, iterations talk to and inform each other through the process of design, which relies on us accepting a substantial place in the full design processes of these objects. It is the DIY perspective on 3D printing that tempers and transforms this technology from one that follows a linear progression of mass consumerism where we might be printing out the latest table from Ikea, to one where we are participating in both global conversations and local designs through adapting the different versions of objects to our needs. Stacey Kuznetsov and Eric Paulos's define DIY:

> [A]ny creation, modification or repair of objects without the aid of paid professionals. [They] use the term "amateur" not as a reflection on a hobbyists' skills, which are often quite advanced, but rather, to emphasize that most of DIY culture is not motivated by commercial purposes. (1)

DIY became popular after World War II and particularly so with the introduction of home improvement stores where the residential grade tools could be purchased and the know-how about projects could be exchanged (Watson and Shove 73). DIY communities have both a global sense of connectivity and an informational awareness, but they also a dedication to living locally and sustainably. While the DIY mentality was strong and encompassed many types of projects during the second half of the 20th century, until very recently the tools necessary to accomplish certain operations where limited. For example, DIY-ers were able build spaces and objects from scratch such as adding a room to a house, building a fire pit in the backyard, and lately creating small electronic devices using open-source platforms such as Arduino. Where DIY work ran in to a wall was repairing or adapting existing object that were mass produced because these parts were often highly specialized and difficult to impossible for individuals to recreate themselves.

DIY-ers needed spaces similar to the home improvement stores where they could find tools and exchange expertise about repairing and adapting objects without calling on a professional or spending large sums of money getting a replacement part from the original manufacturer.

All of this boils down to the state of craft today and the roles that people are taking up where corporations and even municipalities have left off in the construction of their environments. Where does craft happen? At what scale? By whom? For whom? Who is involved? What is the relationship between the demand for an object, the craft that is necessary to product the object, and the time required for it to be made? The short-lived consumables from traditional manufacturing practices are in stark contrast to the DIY community's *rhetoric of making*. The DIY culture emerges out of a desire to recognize our required participation in the design, construction, and interactions of our individual and timely environments that we want so badly. The recent wave of DIY and maker culture, with its emphasis on technological handiwork, changes the pace of demand in cities by acknowledging the post-urban quality of iteration. In this context, iteration means variations on a theme and relies on the trial and error of design, the slower timescales of using an artifact to determine how to change it, and communities of like-minded makers who are tweaking and sharing their designs. The availability of tools, expertise, and contexts in which to share and discuss reshapes people's understandings of, and approaches to, their spaces. They now have the opportunity to transform and adapt their spaces to suit their needs at an individual scale and in real-time, but only if they are willing to actively reflect on an object through their interactions with it.

These real-time objects, what I am calling "on-demand artifacts" seem to have finished where digital communication started: where digital media shrank cities without regard for the geography of physical spaces, 3D printing has shrunk cities without regard for the time of design and production. How does the DIY approach allow us to address this assumption of speed in on-demand artifacts? Slowing down is not exactly the correct response to these artifacts, and it is likely not even really possible anymore. Instead, by considering the iterative nature of this new and fast-growing technology, we have the opportunity to make the process of design itself multi-dimensional by tracing out how it functions across media. In this way, we can see the back and forth between versions of an object that do not respond to the strict demands for immediacy of real-time expectations. We can gain perspective on 3D printing through the affordances of materials and communities of expertise that support the design process. DIY culture demonstrates rhetorical qualities that ask very different things from the users of these objects.

In this chapter I will focus on the notion of repairing, reworking, and reengaging with existing objects and spaces using 3D printing technology. In almost all cases of 3D printing there are three iterations of an object and by accounting for their interactions we are able to trace out how DIY-ers, who are the avant-garde of post-urban repopulation, are rhetorically engaging with the objects and spaces around them:

- **The Broken Iteration.** This iteration is the physical object that will either be scanned and then replicated, or replaced with a newly designed object. As I mentioned above, the impetus for much of the wok done with 3D printing is in response to objects that are understood as "broken" whether

because of a physical malfunction, or because of a rhetorical or design-based failure of the object.

- **The Virtual Iteration.** This iteration is the virtual model of the object that will be printed. Because of the affordances of the digital medium, this iteration is capable of being shared with the wide community of DIY-ers who comment on, improve on, and add to these models as part of their interest in "making." Their engagement here, in these design communities, defines the expectations of active members and citizens in the DIY culture.
- **The Printed Iteration.** This iteration is the subsequent physical object that is in direct response to the Broken Iteration. The powerful and curious thing about the Printed Iteration is that it will likely cycle back to become a broken iteration depending on the demands of the designers/makers and whether this iterations fits their needs.

The affordances and communities of 3D printing highlight a shift in the way demand has traditionally operated in cities. Mota asks:

> But what applications will make a large number of others want to own and/or use a digital fabricator just as they now own and use laptops? What will compel them to get home, turn on their computer, check their email and set their 3D printer or laser cutter to fabricate something? What's that something that no one else can offer or that costs too much to acquire? (284)

Her answer to these questions is the "desire for personalized products" (284), but from the perspective of the post-urban, I believe that there is more to it than that. The inhabitants of post-urban cities are seeking engagement and a rhetorical connection to the people, objects, spaces, and technologies around them. In response to the assumptions for

real-time products in today's cities, the post-urban perspective lets us see the complexity of interactions with objects, which ultimately leads to a new perspective on rhetoric that allows us to more tangibly connect with objects, spaces, and cities that flicker across media.

DIY: Do Iterations Yourself

I was tempted to name this section " My Mother was a 3D Printer," as a tongue-in-cheek reference to N. Katherine Hayles's book, *My Mother was a Computer*. In her book, Hayles describes her own mother's work as a "computer," a person who computes or crunches numbers, during World War II. While in Hayles's example the machine definition of "computer" eventually completely overwrote the human definition, with 3D printing the results will likely follow the opposite path. "Printers" today are machines, but as the technology, availability, and competence for 3D printing grows, there will likely be a generation in 30-40 years who will be talking about how their parents were "printers," or people who print. In order to keep this distinction straight, throughout the next two sections I refer to the machine as the "3D printer" and when I refer to DIY-ers who use this technology I call them "human printers." Our fascination with this new technology is exhibited in a wide range of sizes, contexts, formats, and materials. Some examples of the range of 3D printing projects are: a concept car (Cavale), and museum pieces such as the famous statue of Thomas Jefferson at the large end (Pack), all the way to printing model buildings at the atomic scale (Diaz). However, while the final product is often what we are shown the most, it is the iterative process of 3D printing that I am going to talk about in this section.

DIY (do-it-yourself) is a misleading acronym. Like all processes of design 3D printing is not a solitary one. Instead, we must develop and rely on our relationships with tools and communities, and experts and amateurs who have worked on related projects. Iteration in the DIY culture of 3D printing takes the form of two related processes. The first is the development and cultivation of knowledge bases about design where human printers must first work to gain knowledge from interacting with the objects themselves. This search for knowledge is rhetorical because it has to do with human printers' relationships with their tools such that the process of design is itself a tool. The second process has to do with the sharing of bits and atoms where human printers are engaging with and learning from communities of people that share similar interests. Whereas the first process is about cultivating knowledge, the second process is about sharing designs, and through 3D printing, sharing the actual objects themselves. As our engagement at some level of design increasingly becomes an everyday activity for many of us, rhetoric becomes less valuable and productive when it is understood to be about persuasion toward a known end. Instead, with respect to design, rhetoric is more valuable when it is understood to be about the inquisitive and *inspirational* nature of design for designers, users, and their communities at large.

Cultivating Knowledge

Consider this situation: an internal mechanism of your expensive Bugaboo stroller has broken and the replacement part is either extremely expensive or impossible to find. This is a perfect example of a Broken Iteration that has failed mechanically, and how we expect this problem to be resolved can also tell us a great deal about our relationship to the city, its spaces, and its communities. In this instance, the failure involves two small

pieces in the mechanism that controls the stroller's handle. We could replace the whole stroller by going to the store right now, but that is too expensive and seems like a big waste to replace the entire stroller when one small part fails. High-end artifacts such as this often have no "user serviceable parts," which means that the object itself is telling us that we do not have the skills or the materials to fix any problems that may arise. What is more, because oftentimes we lack the proprietary tools necessary to complete the repair further emphasizes that we are not allowed to make an attempt either. Working against this object's insistence that we lack the skills to repair it means foregoing the speed of quick-fix replacements and instead turning to options for cultivating knowledge about this repair. If you want to fix the stroller ourselves, where would we begin? From where do we gain the knowledge and the courage to act?

It is this sort of situation that causes many non-specialists to feel unprepared and under-skilled to make changes to artifacts around them. However, non-specialists do have an implicit understanding of what artifacts do and how they work from their everyday experiences. Every time we assemble a piece of Ikea furniture or take apart a kitchen appliance, we are gaining knowledge about the dis/assembly processes and the roles of various materials that we can use in future projects and situations (Dant). Norbert Wiener describes this relationship we have with various systems of objects and spaces as "feedback":

> [T]he property of being able to adjust future conduct by past performance. Feedback may be as simple as that of the common reflex, or it may be a higher order feedback, in which past experience is used not only to regulate specific movements, but also whole policies of behavior. Such a policy-feedback may, as often does, appear to be what we know under one aspect as a conditioned reflex, and under another as learning. (33)

For Wiener, feedback works when some part of the product of a system gets reintroduced to that system in an influential capacity. This sort of "feedback loop" means "the system's output reenters the system in such a way that it regulates future results" (Adamson 241). Such feedback is rhetorical in the sense that it is the *continual reassessment* of our experiences with objects and spaces that informs our actions, what artifacts we deem to be failures and success, and how to fix or learn from them.

Watson and Shove argue that the relationship between practices, materials, and competencies is crucial for the DIY culture (72). They write, "[T]he history of DIY…suggests that competence is perhaps better understood as something that is in effect distributed between practitioners and the tools and materials they use" (77). In the example of the stroller, the DIY-er, who goes by the handle "dscott4," first had to dismantle the broken component on his expensive piece of equipment. This initial process begins an act of communication between DIY-ers and the objects with which they are working. With the stroller, once the Broken Iteration has been identified, the Virtual and Printed Iterations are somewhat easy to come by since the Printed Iteration needs to copy the function and material tolerances of the Broken Iteration exactly for the stroller to work as it did before. To fully understand this fact we produce knowledge, both explicit and tacit, by getting our hands dirty in a process Donald Schön calls "reflection-in-action." He writes, "[W]e may reflect in the midst of action without interrupting it. In an *action-present*…our thinking serves to reshape what we are doing while we are doing it" (26). The tacit knowledge we develop from engaging with objects and spaces becomes a driving force in itself pushing us to change our environments based on our knowledge of other environments we have encountered.

Tim Dant agrees with Schön when he points out that that this knowledge is often contextual, and further, it is often very specific to the intimate relationship between humans and objects. Dant writes:

> The communication process between humans and objects is 'pragmatic' in the sense that meaning is contingent on the current situation that continually unfolds in the course of the interaction with the object. It is particularly difficult to get access to because it is so familiar in ordinary life that we seldom notice it unless things go wrong and because the meaning exchanged between a person and a thing is not directly available to an observer. (15-6)

One of Schön's examples, building a fence gate, is a great exercise for how to build similar objects out of similar materials. Similarly, if the wheel of the stroller had broken instead of the handle mechanism, we could use the knowledge gained from changing flat tires on a car to address this similar problem. The intuitive *knowledge through doing* that we develop from "getting our hands dirty," while not necessarily communicable to others, allows us to evaluate and inform our actions when similar situations arise in the future (Schön 22).

But more than just tacit knowledge, the processes of design and repair that Dant and Schön describe also help DIY-ers develop directly applicable skill sets that are not specific to a single context or material. Schön refers to these as "unfamiliar situations" (34). "It is common," Schön writes, "in these types of situations, to speak of 'thinking like a doctor…to refer to the *kinds of inquiry* by which competent practitioners bring available knowledge to bear on practice situations where its application is problematic" (34, emphasis added). In these unfamiliar situations, the actors whom Schön calls "practitioners" and whom I call "DIY-ers," rely not on previous skills, but previous models of questioning, interrogating, and evaluating that readily transfer between

contexts. Indeed, the New London Group writes: “Transformation is always a new use of old materials…Designing always involves the transformation of Available Designs; it always involves making new use of old materials” (Cazden, et al. 75). But if we are making “new uses of old materials” using our own specific tacit knowledge and models of inquiry, how do we expand these models? In other words, is the “out of the box” thinking we have cultivated to respond to previous unfamiliar situations still effective in the post-urban city?

While knowledge can be cultivated by “getting our hands dirty,” our ability to do so is limited if we only work in one medium. Within post-urban cities we have the opportunity to capitalize on the fact that knowledge gets developed through iteration, when artifacts are repeated in a variety of media. With respect to the design process, iteration provides new perspectives on problems and potential fixes. While some crucial aspect of the Broken Iteration may escape detection through physical manipulation, examining the Virtual Iteration and its capacities to rotate and explode diagrams of components may provide a new and unfamiliar perspective to a familiar object. Likewise, over time, the solution may change based on usage patterns, and these patterns would not have been visible or available before the initial repair or redesign of the Printed Iteration was made.

Consider this thought experiment by the designers of *Cunicode*, a design group that specializes in 3D printing and “creative fabrication” when they decided to redesign the traditional, utilitarian, and somewhat boring coffee mug (“One Coffee Cup”). In this case the Broken Iteration is not functionally broken, therefore, the designer is responding to the blank canvas of the ubiquitous and unremarkable diner coffee mug. The typical

mug is "broken" in the sense that does not have the shape, materiality, or qualities that the designer/user desires. Everyday *Cunicode* produced a new design or a new Virtual Iteration that is then fed back into the system or the conversation about the design of coffee mugs in general. Each design is a response to previous designs and actually removes itself from the list of designs yet to be created. Indeed, objects themselves are persuasive in the ways their forms fit our hands or our bodies, and the ways their interfaces are attuned to our eyes and fingers, and depending on the quality of the designs, their persuasive appeals may be more or less effective. It is through exploring these interactions from as many differently-mediate perspective that will give us the greatest appreciation for, and knowledge about, the spaces in which we live and the objects with which we interact.

Sharing Bits, Sharing Atoms

Schön writes, "The student cannot be *taught* what he needs to know, but he can be *coached*" (17). DIY in general, and 3D printing in particular, are perfect instances where the benefits of suggestive processes for learning skills and models of inquiry outweigh other, over-structured processes of direct instruction. Watson and Shove write:

> However, the reality of DIY projects confounds any such simple one-person, one-tool interpretation of hybridity. In DIY, tools are useless except when brought together and combined appropriately with other tools, with materials and with the structure of the house itself. When we focus on the process of doing DIY, the range of this distributed network and the multiple elements of competence at stake are immediately apparent. (79)

One major reason for this need to re-imagine what we mean by "competencies" is that these communities, whether they are in physical or digital spaces, are made up of very few professionals. In other words, the communities that are now available for addressing

questions certainly complicates the definition of the "expert," and this lack lends itself to practices of everyone coaching everyone, not hard and fast knowledge disseminated from on high. For example, one website, *Stack Exchange*, aggregates different knowledge communities and "build[s] libraries of high-quality questions and answers, focused on each community's area of expertise" (*Stack Exchange*). Kuznetsov and Paulos note that such communities of experts fall somewhere in between individual and communal work. These communities, they write:

> [Compliment] the predominantly solitary practice of doing DIY work: 'working and spending time with my friends' is not a popular motivation for contributing to DIY projects, thus suggesting that DIY is a culture that strives to share together while working alone. (8)

Coaching is also complimentary to the feedback type of knowledge that arises in the relationships between people and objects. Equally, these communities are places where people learn from seeing what has worked for other DIY-ers and then adapting those solutions to fit their needs.

However, we often need more than just great ideas to make things. We also need materials, and often these materials need specialized tooling or industrial fabrication processes that are beyond the grasp of even the most diehard DIY-ers. Recently, the development of physical locations that facilitate the sharing of knowledge such as tool lending libraries for DIY projects ("List of Tool-Lending Libraries"), and material libraries that catalog and store incredible ranges of physical media (Kelly "Material Libraries") has been on the rise. "Construction kits," such as flatpack furniture and grills, have been around for a long time that rely on end-user assembly to save costs. Similarly, kits of ready-to-assemble electronics components and objects such as MakeKits make DIY work easier and provide hands-on knowledge about an object's internal design

(*Maker Shed*). These kits and libraries are the middle ground between mass production manufacturers and truly personally customized, from-scratch fabrication (Mota 281). And yet, while these kits give DIY-ers an understanding of an objects "guts," they only require assembly so there is little to no design work involved in them. Coaching is certainly a result of working with kits, but the experience is limited, because the components are still pre-formed and require no design input from the users (Dant 12).

How does this framework of "coaching" change in light of 3D printing? In other words, how do the forms, materials, and adaptability of printed objects influence the ways in which we contribute to our communities, interact in our spaces, and cultivate knowledge? In contrast to physical kits of parts, 3D printing relies on communities and public databases to "[provide] both designers and non-designers with blueprints for fabrication" (Mota 282). Databases such as *Thingiverse* allow people to share their designs and Virtual Iterations that others can freely download and tweak to address their own needs using free and easily-learned modeling software such as *Google SketchUp* and *Autodesk 123D* (Kelly "AutoDesk 123D"). The Bugaboo stroller is one such example of a fix that appeared on the DIY instructions database *Instructables* (dscott4). The interesting aspect of 3D printing, and what makes it so compelling for the post-urban condition is that today, "having the bits is almost as good as having the atoms" (Weinberg 15). Post-urban iterations alter coaching-as-knowledge production when what is shared is not just the tips, suggestion, or stories about working with certain objects, but we are now able to share the objects themselves. Of course, the trade-off in the design process is that true customization—where something is designed and built by non-professional end-users—means extending the time from conception to finished product.

The prospect of individually designed and produced objects that are custom pieces is one of the mainstays of DIY culture. This mentality dramatically reshapes communities as they become driven less by the division of labor and more by the sharing and open-sourcing of techniques and practices (Anderson).

The availability of these Virtual Iterations raises concerns about where the line can be drawn between fair use and copyright, intellectual property, and patent infringement. Weinberg highlights some of the potential pitfalls of the residential scale of 3D printing by comparing it to the introduction of personal computing (1). The shift from mass production to personal or desktop printing will "likely increase the number of innocent patent infringers—people who infringe on a patent they do not know exists…Sharing designs on the Internet amplifies this problem" (Weinberg 5). One extreme example is *Pirate Bay*, the website devoted to sharing, quickly became a forum for pirating, digital information such as songs and programs, now has its own section for physical objects called "Physibles" ("Physibles"). Weinberg's comments are very much in step with the issues of the post-urban city. Where do we draw the line between public artifacts and private artifacts? Who owns this stuff? Who has the right to recreate an object? While these concerns are certainly not at the scale of individual spaces—we cannot, as of yet, 3D print a building—we are talking about almost every object with which we interact in these spaces and the things that move through cities with us.

The Rhetoric of *Wabi-Sabi*: The Power of (Im)Perfection

With exploded artifacts we saw an assumption that the media of the city were separated and because of this separation the city was dissolving. With collapsed artifacts

we saw an assumption that the media of the city worked seamlessly together and therefore the city was becoming infinitely and impossibly rich with information. Now, with on-demand artifacts we see an assumption that the media of the city operate in a real-time condition that emphasizes the quick and easy accessibility of objects. This third assumption contributes to our understanding of the city as something that is rapidly changeable, but finally has the potential for perfection through individualized customization and the cultivation of knowledge from multiple media perspectives. Much of this interest in perfection at an individual scale is driven by what we believe to be the advantage of computer-aided design and 3D modeling software. While the ability to scan or copy an object can be highly desirable and in fact necessary, as in the case of the Bugaboo stroller's handle mechanism, giving too much attention to the perfection of 3D printers can produce is dangerous. Jutta Treviranus writes, "What is perceived as perfect repels efforts to improve and become outdated and impoverished" (3). By seeking "perfection" we may achieve truly personalized objects, but we are also not taking advantage of the unforeseen ways that these objects will have to interact with their environments and the needs of their users. Instead, recognizing 3D printing as an iterative tool in the design process means that it has a role to play in the ways design improves through imperfect iterations. The Japanese aesthetic of *wabi-sabi* provides a necessary perspective on (im)perfection that we can use to understand the expansion of rhetoric's definition from persuasion to inspiration in the post-urban city.

Wabi-sabi is a Japanese aesthetic of beauty. While inherently difficult to define, *wabi-sabi* for James and Sandra Crowley is about "achiev[ing] the same sense of ordered placement and balance within interior space that is found in nature" (1). Richard Powell

defines the words individually: "[*W*]*abi* came to refer to the ideal hermit's life…and the aesthetic values underlying a solitary existence…*Sabi* was refined over the years to emphasize a state of receptivity, fostered in remote natural settings" (6-7). Leonard Koren defines it as "a nature-based aesthetic paradigm that restored a measure of sanity and proportion to the art of living" (9). He also uses words such as "rustic," "impermanent," "imperfect," and "incomplete" (21, 46, 49). And yet for Koren's definition, the aesthetic nature of *wabi-sabi* relies on three qualities: distinctiveness, clarity, and repetition (75). Of the three, it is the repetitive nature of *wabi-sabi,* what Koren previously refers to as the "essence of tradition" (35), that connects it most directly to the post-urban condition. At first, imperfection and repetition seem at odds with each other considering that the goal of the design process is to produce an artifact that best suits the conditions of a space or the needs of an individual. Indeed, it is imperfection that causes of to turn to repetition to find a better and better fit. Perfection without this process of trial-and-error is empty as Stephen Bottomley and David Goodwin argue: "An argument is often made that working with tools capable of such precise repetition leads to the creation of objects that are rendered sterile due to their unnatural perfection" (1). It is possible that the Printed Iteration of a component will be a "perfect" replacement in that it is an exact copy of the Broken Iteration and it will allow the artifact to function as it had before. But the human printer of the component for the Bugaboo stroller may have gained some knowledge about this mechanism of the stroller, still he has done little more than copy what he has already seen. He has done little to affect the rhetorical and persuasive affordances of this object.

How is the imperfect work of design beneficial for rhetoric? In a world of increasing customization, user-centered design, and co-creation what levels of imperfection are we willing to accept in our objects and spaces (Hoftijzer)? How does this drive for perfection—a perfect fit—inform our actions and persuade us to pursue particular ends in cities? "For several centuries," Wiener writes, "science, dominated by the Aristotelian impulse to classify, neglected the modern impulse to search for ways in which phenomena function" (67). Previous definitions of rhetoric argue for the perfection of situations or conditions either from the author's/rhetor's perspective or from the perspective of the audience. This insistence on perfection is tied to the deep connection between rhetoric and persuasion. One of the most often-cited definition of rhetoric is the one set down by Aristotle more than two millennia ago: "the faculty of observing in any given case the available means of persuasion" (6). Similarly, Lloyd Bitzer writes:

> [R]hetoric is a mode of altering reality, not by the direct application of energy to objects, but by the creation of discourse which changes reality through the mediation of thought and action. The rhetor alters reality by bringing into existence a discourse of such a character that the audience, in thought and action, is so engaged that it becomes mediator of change. In this sense rhetoric is always persuasive. (4)

Here again, persuasion is the term used most often to describe "what rhetoric is." An overemphasis on the persuasive aspects of rhetoric, however, while helping to locate this slippery term, can also lead to a degree of determinism about its capabilities—it implies action only toward a known end, or at its worst, it is pigeonholed as unethical manipulation. While for Patricia Bizzell and Bruce Herzberg:

> Rhetoric still means the practice of effective speaking and effective writing; rhetoric still means teaching the strategies for effective discourse; but rhetoric, drawing on centuries of theoretical analysis of the relation between discourse and psychology, between discourse and social order, between discourse and knowledge, is also a field of inquiry, a complex

> and sensitive theory of language that seeks to describe its operation in human affairs. (919)

However, by returning to the qualities of craft that underlaid rhetoric at its start, qualities that are also seen in design pedagogies, we can expand these definitions of rhetoric. If we see the definitions of rhetoric as a spectrum with "persuasion" or "suggestion" as the benign ethically-neutral middle terms, and "coercion" or "manipulation" as the detrimental or ethically-negative terms, then the generative, productive, and ethically-positive terms would be "inspiration" or "motivation."

We can get at the relationship between rhetoric, inspiration and (im)perfection by returning to DIY and asking: What drives people to design and make objects themselves? We are driven to create things ourselves when we need or want something but do not have at hand any of the options that correctly fit the situation. For example, while I was writing this chapter, my wife was looking for at GTD (get things done) application. She had only a few requirements: the program would have to sync across her three devices (laptop, iPad, and iPhone); and, being a visual person, she wanted to be able to view her tasks along with a calendar rather than a list view. Sounds simple enough, right? Not exactly. While lots of programs did some of what she wanted, not did all that she wanted. The frustration that came out of this type of situation is what drives many people to the point of, "I could do this better myself!" When we have come to expect an option to fit our needs right now, the reality is that the one-to-many scenario of mass production, and even the many-to-many scenario of app design, are not sufficient. This frustration is what gets people to take matters into their own hands.

When describing the benefits of DIY communities, Kuznetsov and Paulos write:

> Above all else, our participants contribute to DIY communities in order to get "inspiration and new ideas for future projects" (81% strongly agree, 16% agree) and to "learn new concepts" (68% strongly agree, 29% agree). (5)

If these are the reasons that people turn to DIY communities, then it is interesting to note that they are not looking to be told *how* to do something, nor are they looking to be *convinced* about the best course of action. In short, the give-and-take of DIY communities is not based on persuasion. Instead, inspiration is the biggest driving force behind their participation. The biggest part of the DIY experience is trying things out, learning through doing, and allowing the process to help us generate both answers *and* more questions, or what Richard Buchanan calls "wicked problems." Buchanan argues for the productive use of "design thinking," particularly when it works against the rigidity of disciplinary borders—for example that only architects have the knowledge/training to speak about built form, etc. Wicked problems are:

> [A] class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing. (Rittel qtd in Buchanan 15)

For Buchanan, the designation "wicked" has to do with "the relationship between determinacy and indeterminacy in design thinking" (15). The determinate model is a linear approach similar to how we normally think of responding to ecological conditions: identify the contexts, conditions, and actors and then present a responsible solution (15). And we do this when we seek to simply copy an object without working to reflect on, or understand, how its design operates. By contrast, in the indeterminate or wicked approach, designers must not, and in fact cannot, identify the problem at the outset. In

short, we only can identify the problems, contexts, and conditions in which we are working after we have struggled with our objects and their Broken Iterations (Schön 93).

John Muckelbauer describes a condition similar to Buchanan's wicked problems when he discusses "imitative inspiration," which "transmits itself through a kind of infectious quality. Just as a magnet enables metal to also function as a magnet, the inspiring model…enables the imitator to inspire in turn" (74). Such a model, argues Muckelbauer, does not transmit content, nor does it tell us "what to say or how to say it" (76). Instead, he states that such inspiration carries speakers or writers—and to this I would add designers and makers—"out of themselves." Simply identifying and even encouraging conflict, grappling, and tension do not give us, as designers—whether seasoned professionals or novice DIY-ers—enough information about how to act. Therefore, in the post-urban city, *rhetoric-as-inspiration* becomes necessarily contextualized while we work to navigate multiple spaces in multiple mediums, and as such, rhetorical action is shaped by the acknowledgement of the ways people interact with and adapt (to) their spaces. Dant writes, "Designed and made objects derive their meaning from how they fit in with human intentions that were anticipated when the object was formed" (29). These inspiration-based relationships are not definitive or deterministic, and their malleability requires the continual attention and reflection of active citizens.

Similarly, for Wiener, "Not only can we build purpose into machines, but in an overwhelming majority of cases a machine designed to avoid certain pitfalls of breakdown will look for purposes which it can fulfill" (38). In other words, Wiener is arguing that in their own ways, objects seek out purposes, contributions, and challenges

they can make to their present situation. However, the expected outcomes of a DIY project are not necessarily so straightforward or easily predicted. When one component of a product (a stroller, a pair of glasses, a toaster, etc.) fails, approaching the problem iteratively means testing solutions until a successful one is found, which in turn may lead to other discoveries that may not have been conceivable before the process of design had begun. If failure is seen as useful, a basic principle in "The Hacker Manifesto," a foundational statement for DIY, then how does this affect our approach to rhetorical situations (The Mentor)?

Mistakes, failures, and our processes for recovering from them can be amazingly informative actions that compel and inspire us to take new actions and acquire new knowledge (Dant 19). Failure is not always a bad thing, and when we consider the *wabi-sabi* perspective, failure and imperfection are actually necessary components of the design process. Imperfection is not just simply another name for the "radical" or the "third" or a given set or binary. These terms have never fully satisfied me largely because they seem to simply refigure/reorient the existing binary they are trying to upend. This issue is what Muckelbauer addresses in his discussion of an affirmative approach that is both different and the same from a dialectical approach based on negation. Instead, from the glitch, the accident, the imperfection, and the failure comes the potential for new practices that were not designed into or against the system. The inconsistencies of design, the imperfections between what was asked for and what was produced, are of paramount importance because they are the sites and the outcomes of the system generating unforeseen results, which can lead to new perspectives on our objects, our spaces, and ourselves.

Disposable Citizenship

Anil Dash is a blogger who writes about the effects technology has on culture and specifically underprivileged or underserved demographics that do not have access to "the institutions that define our culture" (Dash). In one post he describes 3D printers as teleporters that are able to essentially transport an object from one location to another. He writes:

> I know that sci-fi nerds will point out that this is hardly teleportation, since you're cloning the shape of the original object rather than actually sending the original object somewhere. But sci-fi correctness is not nearly as useful for the 3D printing industry as a totally futuristic concept that can get normal people excited. Imagine a simple television ad with a clean, well-designed (not a kit!) device saying "when you lose the wheel for your kid's toy car, her friend can teleport her a replacement." (Dash)

Dash's point about the limits of "sci-fi correctness" is actually less of an issue than he makes it out to be. Science fiction and fantasy are excellent genres for non-specialists to experience and imagine possibilities of a technology, a media, or a culture.

Consider this example. The famous modernist architect Louis I. Kahn was once brought on as a consultant to a General Electric project during the 1960s. In hushed tones, the engineers showed him a mock up of a spacecraft and what life in space would be like in fifty years. Kahn took one look and replied, "It will not look like that" (37). Stunned, the engineers sat back and asked, "Why?" Kahn replied that life in space will not look like the drawing because design does not progress in a linear fashion toward a known goal. "If you know what a thing will look like fifty years from now," said Kahn, "you can do it now. But you don't know" (38). This drawing may serve as inspiration, as some quality or vision that we might like to see, but unforeseen challenges and

developments along the way will cause the end product to grow and change. Similarly, in Dash's example, the fact that 3D printers are similar to but not exactly like teleporters is of little importance. What is important is that we recognize how the petri dish of fantasy around the teleporter has allowed us to explore the implications, limitations, and possibilities for this genre of technology. From these ruminations we can gain clues as to how we might engage with such a technology so that we are not starting from scratch when it does finally arrive.

The affordances of 3D printing and the DIY culture create a conflux of media, spaces, communities, and objects that shape our participation in particular ways. Being reflective in this context means a new mode for the citizen, what I call "disposable citizenship." Mota writes:

> The DIY stance can be traced back to the 1900s Arts and Crafts Movement and in the U.S. it evolved from cost saving home improvement activities of 1940s and 1950s into a creative act of rebellion against mass production, consumerism, planned obsolescence and waste. (283)

Curiously, though, while it certainly is the case that the DIY mentality works against the planned obsolescence of mass consumerism, the constant attention to adaptation elicits its own type of rejection of a current set of conditions and rapid turn over. Mota addresses this concern when she describes the way that 3D printers waste little to no material. She says that from such a waste-less process we might be less inclined to see the consequences of quick replacement of the artifacts we create. However, "precisely the fact that products can be made at the push of a button," she writes, "may lead us to regard them as disposable and easily replaceable, thus decreasing the product's life cycle and greatly increasing the amount of waste" (285). Mota's warning, while it seems correct is also informative because it demonstrates that our concerns about the longevity of a

product may have as much to do with the construction/assembly process as it does with the waste that the actual artifact itself creates.

Citizenships are disposable when the iterations that create them are lost to the moment-to-moment nature of objects being presented as increasingly perfect fits for a situation (Stiegler 83). One-off and rapid fixes to a problem are also part of 3D printing and can serve to undercut the larger benefits the DIY community. After all, once a problem is satisfactorily addressed, most of us move on to the next problem. Despite its reflective nature, citizenship becomes disposable when designers and human printers flit from one of their individual problems to the next. True, they are contributing to design communities, but not in any long-term sense because they are contributing around a specific object or design. Despite the emphasis on repairing versus replacing, there is still the consideration that each Printed Iteration is potentially, and likely, a Broken Iteration that will eventually be reworked or redesigned. The notion of constant reflection on the built environment (including objects) means a reduction in how we understand the stability of these objects. It is this lack of stability, this understanding that at any time we have the capability to rework any object, which has dramatic implications for how we relate to the world around us and what we understand to be our places in the world.

Conclusion: Flickering Citizenships

Polis is this.
— Charles Olson

Post-urban artifacts, which are defined by their iterative and multimedia constructions, have unique affordances that demand new types of participation from us. Given the wide range of post-urban artifacts that we interact with on a daily basis, the roles that we must play as citizens are also multiple, overlapping, and therefore iterative. In an effort to explore the changing nature of citizenship today, this conclusion presents a discussion of "flickering citizenships," which encompass the different modes—compiled, obsolescent, and disposable—that arose out of the artifactual case studies from the previous chapters. At their most basic, citizenships entail a balance between rights (what we can expect from others) and duties (what others can expect from us), and each of these three modes expresses this balance in ways that expand our general understanding of citizenships as they work to accommodate the multimedia fabrics of cities today. Keep in mind that these three citizenships are not the only ones available to us in the post-urban city. Indeed, this introduction to flickering citizenships will provide readers with an iterative sense of participation that they can use when they encounter their own post-urban artifacts, and begin to recognize and construct their own citizenships.

Traditionally, perspectives on citizens and citizenship practices highlight the interactions between people in urban contexts where physical proximity and the pressure working together through deliberation and compromise are at their highest. However, some of the most recent definitions are the most restrictive as, for example, when Richard Bellamy argues that citizenship should be limited to political actions and, in particular,

voting (4). Surprisingly, when we return to ancient definitions of the term, we are presented with a broader and more wide-reaching definition that is more flexible than many available today. For example, Curtis Johnson describes Aristotle's efforts with citizenship as he worked to craft a definition that was inclusive of, and workable in, all contexts (77). Obviously, a universal definition quickly becomes problematic if it is too specific or situated since each group or constituency has its own unique requirements and constraints. Similarly, Kenneth Rufo and R. Jarrod Atchison argue that we evoke the term "citizen" too freely thereby causing us to lose the solid understanding of its definition (198). The inclusion of digital spaces and other forms of media, so the argument goes, serves to further expand an all-inclusive definition to the point of uselessness. The inherent differences between the wide variety of groups, media, and spaces available to us today seem to add legitimacy to the arguments of Bellamy and Rufo and Atchison, who desire to reign in the scope of citizenship to a small set of particular acts.

When we return to Aristotle, we see that one of the common factors among citizens is that they are the ones who "exercise authority in 'deliberation' and in 'judging'" (Johnson 79). While Rufo and Atchison agree that the juridical quality of citizenship is difficult to escape (195), Johnson goes on to explain that by including "deliberation" and "judging" in his understanding of citizenship, Aristotle creates a definition that can account for the conditions beyond those that are democratic (79). However, while the qualities of deliberation and judging are more flexible and can accommodate different configurations of citizenship, they are still too broad and lack the specificity necessary for practical action in different situations. How can we add to

Aristotle's definition so that it is more actionable and productively responsive to today's multimedia contexts?

David M. Ricci writes that citizenship is typically thought to revolve around the relationship between a people and its government, and the practices for making an individual's or a collective's voices heard (3). Indeed, this simplification of citizenship into an easy binary is a common one today, "By far the most common juxtaposition, the item that the citizen is most frequently differentiated from, is the state and those who work directly for the state" (Rufo and Atchison 196). That said, Ricci does not reduce citizenship to an us/them binary and instead works to show the responsibilities that we have to shape and maintain our communities, governments, and cities. Instead, Ricci complicates this binary when he argues that the collective responsibilities we have to shape and contribute to the multiplicity of post-urban cities are actually in direct opposition to such a binary understanding. Today citizens are both more localized and more dispersed than ever before, and because of our interactions in different media we come together at a greater variety of scales than every before. We must account for our actions—and their effects—is all of the communities in which we participate, physical and digital. Therefore, in response to assertions by scholars such as Bellamy and Rufo and Atchison, who argue that the terms "citizen" and "citizenship" are used too freely, I want to redefine these terms in response to post-urban cities. The iterative nature of today's cities allows us an opportunity to acknowledge the dispersal and variety of "citizens" and "citizenships" while also resisting the urge to draw them back together into one singular and overly-general definition. In other words, "flickering citizenships" are practices that interact with one another through our engagement with post-urban artifacts.

In this way we come to recognize and take advantage of the fact that our participation in spaces and in media is always multiple.

For Ricci, today's participation in public life is more of an emergent phenomenon, and one that is responsible to itself. He writes, "In a democracy citizens rule, yet if they rule badly, all will suffer" (3). And yet, even through the actions and reactions of citizenships are reflected back on the citizens themselves, Robert Asen points out that oftentimes the competencies related to good citizenships are hard to come by. Why? One reason for the diminution of competencies is exhaustion from exposure to so many different situations, artifacts, and media, and the assumption that we are expected to be responsible in all of them. For example, Richard Butsch asserts that the cultivation of the self is a prerequisite for being a good citizen (2). It is our duty to keep ourselves informed so that we might have the greatest chance of responding appropriately to any new situations as they arise (Butsch 2). Butsch goes back to the ancient definition of citizenship where it was measured by civic virtue, which we can take to mean our responsiveness to, and support of, other spaces, media, and agents (5). Likewise, John M. Ackerman and David J. Coogan identify a contemporary resurgence in the expectations placed on citizens when they describe citizenship as the constant presence of service and civic engagement in our everyday lives (3).

The constant expectation of citizenship leads to a sense of exhaustion in citizens, which we can also see in Jeffrey Grabill's description of the useful of rhetoric and public participation today: "[T]he public work of rhetoric might be to *support the work of others*—to help other people write, speak, and make new media and other material objects effectively" ("On Being Useful" 193, emphasis added). On the one hand, as

Grabill asserts, our duty as citizens is to support and be responsive to the works of others. As we have seen, there is a strong ethical component to post-urban citizenships that extends beyond human-to-human interactions. Once we put them out into the world, we are responsible for the rhetorical effects of the ideas, objects, and relationships of our artifacts. On the other hand, just as we are responsible for the artifacts we put out into the world, we are also responsible for how and why we engage with the artifacts of others. As citizens we have come to expect other agents we encounter to be responsive to us whether those responses include agreements/disagreements or adaptations of our work. This expectation of being supportive and responsive is daunting for citizens, and without proper boundaries our energies for good and responsible participation quickly wane.

With this necessity for boundaries on our public participation in mind, we come to understand that to actively seek the "public good" describes an elusive target, one that is difficult to pin down, one that cannot be specifically identified on large scales, and one that is exactly the overly-general focus that Bellamy and Rufo and Atchison warn against. Instead, the active reflection of good citizenships today is an organic process that is always already a "public work." Just as Butsch argues for the cultivation of the self, in post-urban cities we must work to foster mindfulness in response to particular artifacts and the media of their iterations. With this artifact-based approach we see the benefits of active reflection for citizens regardless of whether or not the product of their actions is a direct, public response to the situation that inspired the act of reflection. Instead, being responsive means absorbing and being mindful of one situation and then using that tacit knowledge in a situation that arises later. Despite appearances, in post-urban cities there are no "lurkers," people who watch and take but do not participate or give back. Through

our use of, and interaction with, post-urban artifacts, we are actively contributing to our cities' multimedia city fabric. We cannot help but be affect by the rights and duties of our chosen artifacts and their situations and these, in turn, contribute to how we understand and act in other situations that follow. The iterative nature of citizenship today means that we can turn to post-urban artifacts as the focal points for describing our options for contributing to the "public good."

In the context of post-urban cities "supporting the work of others" needs to be qualified so it can respond to different iterations, media, and situations. The best way to do this is by defining the rights and duties of such support—the hallmarks of citizenships—around the particular artifacts that citizens encounter. For example, "obsolescent citizenship" explores the different temporal conditions of our spaces. We see such temporal qualities with the *Photosynth* artifact where it is our right to create and borrow from other citizens' iterations of artifacts that overlap, compliment, and complicate each other. Likewise, it is also our duty to remember, sustain, and respond to the iterations of others. Another example of obsolescent citizenship is a physical mural that was defaced and was later repaired using a giant QR code, which is scannable by smartphones and directs viewers to an image of the pre-defaced artwork (Campbell). We see a third example of obsolescent citizenship in the efforts to catalog and map Chicago's old and fading business signs and murals (Lamar). Of particular interest is that these signs are doubly vanishing. Not only are they being worn away by the elements, but they also represent business that have vanished, too. Our engagement with such artifacts means being responsible to the city's past, a past that typically would disappear when the last traces—these signs—have faded away completely. By practicing obsolescent

citizenship, we include ourselves in the timescale of the city, which demands a much greater historical awareness. However, we are saved from feeling like we are expected to have such an awareness of the whole city by participating in this citizenship only through this one artifact. Our involvement may lead us to explore similar artifacts, but we have the option to limit our participation as necessary.

Choosing our citizenships through our artifacts is related to Ricci and Asen's arguments about the competencies of today's citizenry since individual participation with artifacts creates the conditions for the emergent themes of these citizenships. Equally, artifact-based citizenships temper Grabill's and Butsch's calls for "support" and "cultivation" that can seem daunting in their broad inclusiveness. Therefore, within the multimedia conditions of post-urban cities, our perspectives on citizenship must focus on how we identify the different iterations of our artifacts and negotiate between them. In order to engage with the changing nature of citizenship today, we must account for citizenship as a dynamic process and not a static fact. In short, citizenship is not *what* we do, but *how* and *where* we do it (Asen 191). Similarly, Robert Hariman and John Louis Lucaites work to expand citizenship beyond its simplistic association with a particular context or action such as voting. "If citizenship is to be an actual mode of participation rather than a merely legal construct," they write, "then it has to be articulated in a manner that encourages emotional identification with other civic actors" (17). Indeed, the weighing of options and the negotiations that we pursue in our daily interactions are numerous from deciding what to wear, to which spaces to operate in, to which groups to associate with. Given the vast array of agents and artifacts, as citizens we must be selective about which negotiations we choose to pursue.

The interactions between an artifact's iterations provide us with clues for how to act in the spaces in which we encounter them. These spatial affordances inform our practices of identification, evaluation, and inscription. Equally, our spaces are influenced by these practices in turn. Similarly, Johnathon Mauk argues:

> [T]o understand the problems and nuances of any set of practices, as they are acted out by a particular group of people, we must have some intellectual tools for understanding the spatial-social complexities of those practices—for understanding how material existence and geopolitical location figure into knowing and acting. (210)

Because location affects what we know and what we do, it is a determining factor in how we talk about, and act as, good citizens. Our participation is determined by the relationship between our social constitution and the spaces and media in which they occur. Similarly, David Fleming agrees with Mauk when he asks about other possibilities for participation outside of his discussion of the move from urban to suburban communities. Fleming writes:

> What are the effects of these different kinds of social space on the ways we render and resolve conflict, on our attitudes toward public argument and our habits of political language? … Are there alternatives to these sociospatial arrangements that promise healthier interactions among us, better chances of our collective freedom, equality, and happiness? (*City of Rhetoric* 179-180)

To ignore "sociospatial" questions is to be only a partial citizen, unable to take full advantage of all that our spaces offer to, and demand from, us. Although Fleming is dealing almost exclusively with the physical media of cities, his questions about the potential for sociospatial arrangements to occur in new spaces and with new interactions among participants suggests a multimedia fabric of city spaces. Therefore, when Fleming later writes that citizens today are those who are developing "a more critical sensibility

about their society," he is also recognizing the need to be more critical about our participation in media other than those that are physical ("Remaking Rhetoric" 218).

Similar to Mauk and Fleming, Nedra Reynolds suggests that our capacity for contributing as citizens is determined by how well we control our spaces ("Composition's Imagined" 229). In the post-urban condition we are now presented with sets of conditions and we must design our ways of inscribing based on the elements that are available to us through the various iterations at hand. Instances of such control can be seen in an example of compiled citizenship such as the collective mapping of public art through Google Maps Street View technology (*Street Art View*). In this instance, not only are the locations of these public art pieces mapped, but this manner of archiving also creates additional media iterations are preserved as well with new community formations depending on the interests of its users. The reflective quality of citizenship is quite insistent here because we are constantly comparing the situations that came before to those we are engaging with now. In the post-urban city, being—the current state or composition of an assembled artifact—is of greater importance than the progression or the process of becoming that assemblage. Compiled citizenship is configured not so much by its movement in and out of fashion, but by its movement in and out of necessity, and its state of being once it has been compiled.

Learning to respond to the affordances of our spaces give us skills to navigate situations that are related but perhaps are unfamiliar for one reason or another:

> The same activity can take on different meanings when undertaken from different perspectives and located in different interpretive contexts. Interpretive contexts emerge in the perceptions of agents and audiences alike. (Asen 194-5)

If we are to have a more robust definition of citizenship, then we must see the relationship between citizens (people who act) and citizenships (responses to situations) as responsive to the different meanings of different artifacts. The most fundamental quality of citizenships today is that they are multiple and we must deal with them in relationship to one another all the time. That said, the notion that citizenship has many facets in not new. For example, T. H. Marshall identifies three elements of citizenship: civil, political, and social (8). Similarly, Ricci also refers to three aspects of "good" citizenship: legal, active belonging and political participation, and "virtuous behavior" (7-8). However, Marshall argues that these different facets of citizenship are never developed together at the same time but arise in response to one another and take on new formations over long periods of time extending as far as centuries (10). Equally, Ricci explains that his different types of citizenship do not mesh seamlessly, which tends to expose loopholes and create conflicts (8).

For Asen, however, citizenships are sets of practices that we engage with at smaller scales than either Marshall or Ricci are describing. Asen writes:

> Multiplicity makes citizenship possible by situating it as something one can take up, rather than as a condition that is always or never present. People do not—and should not—enact citizenship all the time. Full-time citizenship imposes a false simplicity on people's complicated lives and frames citizenship as a burden rather than a process of active, willful uptake. In the present climate, too, full-time citizenship resonates dangerously with an insatiable nationalism. Instead, we ought to encourage various modes of public interaction. (196)

Despite Asen's argument that citizenships are both multiple and situated but not full-time, Rufo and Atchison challenge his approach, which they see as so open that it persists in emptying the term itself. They ask:

> If subjectivity is affirmed by the citizen enacting their citizenship and this citizenship cannot be restricted to people or topics, then who is this subject that acts, how are we to ascertain the mechanisms, processes or structures that allow or disallow a choice of or for political action in the first place? (207)

In fact, the multiplicity of Asen's citizenship-as-modes gains solidity through the flickering quality of "iterative artifacts." Therefore, in answer to Rufo and Atchison's question, today the subject is the reflective individual who is drawing together the different iterations of an artifact in a given situation (Asen 193). It is this reflective process of negotiation, focused on the interactions iterative artifacts' media, which defines today's citizens.

Citizens act through the reflective process of choosing to focus on specific iterations of an artifact and their respective communities, spaces, and media. Indeed, these acts of reflection have ramifications for the system of the city at large. Instead of basing citizenship on sweeping political, social, or cultural acts that we might use for identifying and interacting with different communities, today it is the scale of the artifact that determines our actions. It is no longer enough to say, "we are citizens through our participation in a situation." Participation, by itself, tells us nothing about the intent, medium, or action that might be taken. Instead, citizenships in post-urban cities mean that "we are citizens through our *negotiation* in a situation" as we work to make sense of the relationships between physical and digital media. To benefit from the constant interactions of iteration means to prevent an obsession with resolving any conflicts that may arise (Latour 23). If we confine citizenships to issues of speaking out politically, then it is easy to lose sight of how many of our actions and negotiations create impacts and ripples in all sorts of areas: political, social, economic, spatial, technological, and the

list goes on. We can become complacent in the assumption that the languages and actions of politics are only for politicians, which parallels the assumption that buildings are only for architects and computer programs are only for coders.

The choices we make when negotiating between differently-mediated communities spur on the emergent qualities of participation in cities for people with little expertise beyond their tacit knowledge of their artifacts. The potential for non-specialists to use sophisticated tools to analyze the city is spurring on recent developments in how we understand civic engagement. Marcus Foth, Jaz Hee-jeong Choi, and Christie Satchell write:

> [T]here is a trend towards Geographical Information Systems (GIS) and related tools that can be used by lay persons and non-experts without intensive training. This new trend of GIS has led to the term "Neogeography"…which describes a notion of a "geography without geographers." (3)

For example, consider Code for America, an organization similar to the US Peace Corps and Teach for America, which focuses on developing technical proficiencies in its fellows and addressing technological issues in communities around the country (*Code for America*). Jen Pahlka, Code for America's founder, describes its mission as:

> Peace Corps for geeks…We're trying to give really talented,c reactive people who have these incredible skills a way to connect with problems in the public sector that probably weren't on their radar before. (Pahlka 55)

The participatory approach to communities and governmental functions that Pahlka is arguing for develops through access to different technologies and exposes the workings of these cities to its citizens since, "You can care about your city in a way that's hard to care about the bigger levels of government," says Pahlka (56). Using technology to inform how we redefine our cities, and our participation in them, means "what was once

the sole preserve of builders, architects and engineers falls into the hands of everyone: the ability to shape and organise the real world and the real space" (Russell 4).

However, in the case of Code for America, these fellows are already skilled programmers. How, then, do we square this condition of engaged experts with the optimistic view of Foth, Choi, and Satchell who argue, "The means to engage in participatory culture are no longer limited to the technically versed or the civically inclined" (3). In fact, we all bring specialties to bear on whatever mode of citizenship and situation we choose to participate. The person that undertakes this type of participation is what Rosa Eberly calls the "citizen critic…a person who produces discourses about issues of common concern from an ethos of citizen first and foremost—not as expert or spokesperson for a workplace or as a member of a club or organization" (Eberly qtd in Rufo and Atchison 196). This is especially the case when the interactions that we have with iterative artifacts happen in decentralized and emergent ways that challenge the grander and unified connections found in more traditional definitions of citizenship.

Responses to traditional citizenships often emphasize "radical," alternative, or subversive practices that may or may not be carried out in urban spaces and that seek to challenge or disrupt normative operations and practices. These radical practices can be carried out in specific physical spaces, but are oftentimes more likely to develop in less tangible and more economic and global settings. These practices deal with citizens' participation in informational and postindustrial economies that challenge the status quo, but are difficult to employ in practical application. Flickering citizenships, however, are civically-grounded in specific situations that build on the relationship between citizens and their environment. We can no longer say that are we isolated, insulated, and

embodied subjects who have some large blanket responsibility to all the people, objects, spaces, and technologies around us. As scholars such as Marshall McLuhan and Andy Clark have argued, through our interactions with different media we have indeed extended our senses, our cognition, and ourselves out into the world, but we only do so through our chosen iterations of particular artifacts. Within these ecologies, a singular perspective of citizenship can in no way hope to remain viable, and it must change in response to the new conditions and actors we encounter as well. The changing nature of the post-urban city fabric means that we must reconsider what it means to be responsible citizens, thereby extending citizenship beyond the limits of democratic, political, or governmental bounds. Governance has implications at scales beyond just that of the nation, and in the flickering cities we live in today, governance extends to encompass moderating message boards, tagging images, and connecting the iterations of artifacts across their array of media. Through flickering citizenships we are able to re-inscribe our places in our cities and their multimedia fabrics where their iterations serve as the location that define the limits and expectations for negotiating our participation today.

REFERENCES

555 Nonprofit Gallery and Studios. 2010. Web. Aug. 2010.

"83-year-old Woman Got 3D Printed Mandible." *www.3ders.org: In-depth Resources of 3D Printing*. 3 Feb. 2012. Web. Feb 2012.

Abbott, Carl. "Cyberpunk Cities: Science Fiction Meets Urban Theory." *Journal of Planning Education and Research* 27 (2007): 122-131. Web. Oct. 2009.

Ackerman, John M., and David J. Coogan, eds. *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement*. Columbia, SC: U of South Carolina P, 2010. Print.

Adamson, Glenn, ed. *The Craft Reader*. New York: Berg, 2010. Print.

Aguera y Arcas, Blaise. "Jaw-dropping Photosynth demo." *TED: Technology, Entertainment, Design*. 26 May 2007. Web. Oct. 2008.

Amin, Ash, and Nigel Thrift. *Cities: Re-imagining the Urban*. Cambridge, UK: Polity, 2002. Print.

Anderson, Chris. "In the Next Industrial Revolution, Atoms Are the New Bits." *Wired Magazine Online*. 25 Jan. 2010. Web. Mar. 2012.

Arcade Fire. "We Used to Wait." Part of the online music video entitled "The Wilderness Downtown." Sept. 2010. Web. Feb. 2012.

Aristotle. *Rhetoric: A Theory of Civic Discourse*. Trans. George A. Kennedy. Oxford: Oxford UP, 2006. Print.

Asen, Robert. "A Discourse Theory of Citizenship." *Quarterly Journal of Speech* 90.2 (2004), 189–211. Web. Jun. 2012.

Augé, Marc. *Non-places: Introduction to an Anthropology of Supermodernity*. London: Verso, 1995.

Bachelard, Gaston. *The Poetics of Space*. Trans. Maria Jolas. Boston: Beacon, 1994. Print.

Banksy. *Bang Your Head Against a Brick Wall*. London: Weapons of Mass Distraction, 2003. Print.

_____. Interviewed by Schnack, AJ. "Banksy (Yes, Banksy) on Thierry, EXIT Skepticism & Documentary Filmmaking as Punk." *All These Wonderful Things*. 21 Dec. 2010. Web. June 2011.

Baudrillard, Jean. "The Violence of the Image." The European Graduate School, 2002. Web. Jan. 2012.

Baylor, Amy. "Beyond Butlers: Intelligent Agents as Mentors." *Journal of Educational Computing Research* 22.4 (2000): 373-382. Web. Mar. 2012.

Beauregard, Robert A. *Voices of Decline: The Postwar Fate of U.S. Cities*. New York: Routledge, 2003. Print.

Bell, David. "Cybercultures Reader: A User's Guide." The Cybercultures Reader, 1st ed. David Bell and Barbara Kennedy, eds. New York: Routledge, 2000. 1-12. Print.

Bellamy, Richard. *Citizenship: A Very Short Introduction*. Oxford: Oxford UP, 2008. Print.

Biesecker, Barbara. "Rethinking the Rhetorical Situation from Within the Thematic of *Différance*." *Philosophy and Rhetoric* 22.2 (1989): 110-130. Web. Jul. 2010.

Bitzer, Lloyd F. "The Rhetorical Situation." *Philosophy and Rhetoric* 1 (1968): 1-14. Web. Jul. 2010.

Bizzell, Patricia, and Bruce Herzberg, eds. "Since 1965: Discourse, Knowledge, and Ideology." *The Rhetorical Tradition: Readings from Classical Times to the Present*. Boston: Bedford Books of St. Martin's Press, 1990. 915-923. Print.

Bolter, Jay David. "The Desire for Transparency in an Era of Hybridity." *Leonardo* 39. 2 (2006): 109–111. Web. Jun. 2011.

Bottomley, Stephen, and David Goodwin. "Something Old/Something New: The Marriage of Digital - Craft." *Challenging Craft: International Conference.* 8-10 Sept. 2004. Gray's School of Art. Aberdeen: HeinOnline. Web. Mar. 2012.

Boyer, M. Christine. *CyberCities: Visual Perception in the Age of Electronic Communication*. New York: Princeton Architectural Press, 1996. Print.

Brandt and Clinton, "Limits of the Local: Expanding Perspectives on Literacy as a Social Practice." *Journal of Literacy Research* 34.3 (2002): 337-356. Web. Mar. 2011.

Brown, John Seely, and Paul Duguid. *The Social Life of Information*. Boston: Harvard Business School, 2002. Print.

Brown, Michael F. "Heritage Trouble: Recent Work on the Protection of Intangible Cultural Property." *International Journal of Cultural Property* 12 (2005): 40-61. Web. Mar. 2010.

Buchanan, Richard. "Wicked Problems in Design Thinking." *Design Issues* 8.2 (1992): 5-21. Web. Sept. 2009.

Burtynsky, Edward. Interview by Jim Casper. *Lens Culture: Photography and Shared Territories*. Len Culture, 2006. Web. Mar. 2012.

_____. "On Manufactured Landscapes." *TED: Technology, Entertainment, Design*. Feb. 2005. Web. Mar. 2012.

Butsch, Richard. *The Citizen Audience: Crowds, Publics, and Individuals*. New York: Routledge, 2008. Print.

Calvino, Italo. *Invisible Cities*. New York: Harcourt Brace Jovanovich, 1974. Print.

Campbell, Julie. "QR Code Used to Replace Vandalized Mural and Show Viewers Previous Image." *Mobile Commerce Press: World Leading News on Mobile Commercial Trends*, 15 Dec. 2011. Web. Jan. 2012.

Castells, Manuel. *Rise of the Network Society*. Oxford: Blackwell Publishers, 2000. Print.

Castronova, Edward. *Exodus to the Virtual World: How Online Fun Is Changing Reality*. New York: Palgrave Macmillan, 2007. Print.

Cavale, Jude. "Urbee: the World's First 3D-Printed Car." *Walyou*, 28 Sept. 2011. Web. Feb. 2012.

Cazden, Courtney, Bill Cope, Norman Fairclough, Jim Gee, et al."Pedagogy of Multiliteracies: Designing Social Futures." *Harvard Educational Review* 66.1 (1996): 60-92). Web. Apr. 2010.

Chapin, Sarah, and Eric Holding. "Addressing the Post-Urban." *Renaissance and Modern Studies* 40.1 (1997): 122-134. Web. Feb. 2012.

Christoff, Chris. "Half Of Detroit's Streetlights May Go Out As City Shrinks." *Bloomberg* 24 May 2012. Web. Jun. 2012.

Choi, Charles. "Cities of the Future Will Make a Place for Wilderness." *io9: We Welcome the Future*. 4 May 2012. Web. May 2012.

Clark, Andy. *Supersizing the Mind: Embodiment, Action, and Cognitive Extension*. Oxford, Oxford UP, 2011. Print.

Code for America. Code for America Labs, Inc. 2012. Web. Jun. 2012.

Conley, Donovan and Greg Dickinson. "Textural Democracy." *Space, Matter, Mediation, and the Prospects of Democracy*. Spec. issue of *Critical Studies in Media Communication* 27.1 (2010): 1-7. Web. Jul. 2011.

Cooper, Marilyn. "Rhetorical Agency as Emergent and Enacted." *College Composition and Communication* 62.3 (February 2011): 420-449. Web. Jun. 2011.

Crang, Mike, and Stephen Graham. "Sentient Cities: Ambient Intelligence and the Politics of Urban Space." *Information, Communication & Society* 10.6 (2007): 789-817. Web. Oct. 2008.

Croce, Peter. "Who 'Allegedly' Owns the Packard Plant?" *Michigan Policy Network*. Apr. 2011. Web. Jun. 2011.

Crowley, James, and Sandra Crowley. *Wabi Sabi Style*. Layton, UT: Gibbs Smith, 2001. Print.

Dant, Tim. "The 'Pragmatics' of Material Interaction." *Journal of Consumer Culture* 8.1 (2008): 11-33. Web. May 2012.

Dash, Anil. "3D Printing, Teleporters and Wishes." *Anil Dash: A Blog About Making Culture*. 21 Dec. 2011. Web. Feb. 2012.

DeLuca, Kevin. "Articulation Theory: A Discursive Grounding for Rhetorical Practice." *Philosophy and Rhetoric* 32.4 (1999): 334-348. Web. Mar. 2012.

Dickinson, Greg, Carole Blair, and Brian L. Ott. *Places of Public Memory: The Rhetoric of Museums and Memorials*. Tuscaloosa: U of Alabama P, 2010. Print.

Diaz, Jesus. "Watch the Fastest 3D Printer In the World Creating the Tiniest 3D F1 Car You Can Imagine." *Gizmodo*, 12 Mar. 2012. Web. Mar. 2012.

dscott4. “How to Repair a Bugaboo Pram with 3D Printing.” *Instructables: Share What You Make*, 2 Aug. 2011. Web. Feb 2012.

Fleming, David. *City of Rhetoric: Revitalizing the Public Sphere in Metropolitan America*. Albany: State University of New York P, 2009. Print.

_____. “Remaking Rhetoric in Universities and Publics: Finding a Place for School in Rhetoric's Public Turn.” Ackerman, John M., and David J. Coogan, eds. *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement*. Columbia, SC: U of South Carolina P, 2010. Print. 211-228.

Forester, John. *The Deliberative Practitioner: Encouraging Participatory Planning Processes*. Cambridge, MA: MIT Press, 1999. Print.

Foth, Marcus, Jaz Hee-jeong Choi, and Christie Satchell. “Urban Informatics.” *Proceedings of the ACM 2011 Conference on Computer Supported Cooperative Work CSCW'11*. 19-23 Mar. 2011. Hangzhou, China. Web. Mar. 2012.

Galloway, Alexander R., and Eugene Thacker. *The Exploit: A Theory of Networks*. Minneapolis: U of Minnesota P, 2007. Print.

Gershenfeld, Neil. *Fab: The Coming Revolution on Your Desktop—from Personal Computers to Personal Fabrication*. New York: Basic, 2005. Print.

Gibson, William. *Neuromancer*. New York: Ace, 2000. Print.

Grabill, Jeffrey T. “The Written City: Urban Planning, Computer Networks, and Civic Literacies.” *City Comp: Identities, Spaces, and Practices.* Bruce McComiskey and Cynthia Ryan, eds. Albany: State University of New York P, 2003. 128-140. Print.

_____. "On Being Useful: Rhetoric and the Work of Engagement." Ackerman, John M., and David J. Coogan, eds. *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement*. Columbia, SC: U of South Carolina P, 2010. Print. 193-210.

Graham, Stephen, ed. *The Cybercities Reader*. London: Routledge, 2004. Print.

Grant-Davie, Keith. "Rhetorical Situations and Their Constituents." *Rhetoric Review* 15.2 (1997): 264-279. Web. Jul. 2010.

Guillory, John. "The Memo and Modernity." *Critical Inquiry* 31 (2004): 108-132. Web. Mar. 2010.

Hariman, Robert, and John L. Lucaites. *No Caption Needed: Iconic Photographs, Public Culture, and Liberal Democracy*. Chicago: U of Chicago P, 2007. Print.

Harold, Christine. "On Target: Aura, Affect, and the Rhetoric of "Design Democracy."" *Public Culture* 21.3 (2009): 599-618. Web. Apr. 2012.

Hauser, Gerard A. *Introduction to Rhetorical Theory*. Prospect Heights, IL: Waveland Press, 2002. Print.

Hayles, N. Katherine. "Virtual Bodies and Flickering Signifiers." *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics.* Chicago: U of Chicago P, 1999. 25-50. Print.

_____. *My Mother Was a Computer: Digital Subjects and Literary Texts*. Chicago: U of Chicago P, 2005. Print.

Hemment, Drew. "Locative Arts." *Leonardo* 39.4 (2006): 348-355. Web. Apr. 2010.

Hobart, Michael E., and Zachary S. Schiffman. *Information Ages: Literacy, Numeracy, and the Computer Revolution*. Baltimore: Johns Hopkins UP, 1998. Print.

Hoftijzer, JanWillem. “The Implications of Doing It Yourself: A Changing Structure in Business and Consumption.” *Proceedings of the First International Conference on Integration of Design, Engineering and Management for Innovation, IDEMI09*. 14-15 Sept. 2009. Porto, Portugal. Web. Mar. 2012.

Iedema, Rick. “Multimodality, Resemiotization: Extending the Analysis of Discourse as Multi-Semiotic Practice.” *Visual Communication* 2.1 (2003): 29-57. Web. Jun. 2011.

Jameson, Fredric. *Postmodernism, or, The Cultural Logic of Late Capitalism*. Duhan: Duke UP, 1991. Print.

Johnson, Curtis. “What is Aristotle’s Citizen?” *Phronesis* 29.1 (1984): 73-90. Web. May 2012.

Kahn, Louis I. *Louis I. Kahn: Conversations With Students*. Houston: Architecture at Rice Publications, 1998. Print.

Kelly, Kevin. “Autodesk 123D.” *Cool Tools*. 21 Feb. 2012. Web. Feb. 2012.

_____. “Material Libraries.” *Cool Tools*. 26 Jan. 2012. Web. Feb. 2012.

Kelbaugh , Douglas. “Preface.” *Everyday Urbanism: Margaret Crawford vs. Michael Speaks*. Michigan Debates on Urbanism: Volume 1. Rahul Mehrotra, ed. Ann Arbor: U of Michigan P, 2005. Print.

Kirschenbaum, Matthew G. *Mechanisms: New Media and the Forensic Imagination*. Cambridge, MA: MIT, 2008. Print.

Kolb, David. *Sprawling Places*. Athens, GA: U of Georgia P, 2008. Print.

Koren, Leonard. *Wabi-Sabi: for Artists, Designers, Poets & Philosophers*. Berkeley: Stone Bridge Press, 1994. Print.

Kress, Gunther, and Theo Van Leeuwen. *Multimodal Discourse*. London: Arnold, 2001. Print.

Kuznetsov, Stacey, and Eric Paulos. "Rise of the Expert Amateur: DIY Projects, Communities, and Cultures." *NordiCHI 2010*. 16-20 Oct. 2010. Reykjavik, Iceland. Web. Mar. 2012.

Lamar, Cyriaque. "A Map of Chicago's Phantom Signs for Vanished Businesses." *io9: We Welcome the Future*. 20 Feb. 2011. Web. May 2012.

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

"List of Tool-Lending Libraries." *Wikipedia*, 2012. Web. Feb. 2012.

Lundberg, Christian, and Joshua Gunn. " 'Ouija Board, Are There Any Communications?' Agency, Onthotheology, and the Death of the Humanist Subject, or, Continuing the ARS Conversation." *Rhetoric Society Quarterly* 35.4 (2005): 83-105. Web. Jun. 2011.

MakerBot. MakerBot Industries, 2012. Web. Feb. 2012.

Maker Shed. Maker Media Division, O'Reilly Media, Inc., 2012. Web. Feb. 2012.

Manovich, Lev. "The Poetics of Augmented Space." *Visual Communications* 5.2 (2006): 219-240. Web. 28 Oct. 2008.

Marback, Richard. "Detroit and the closed fist: Toward a theory of material rhetoric." *Rhetoric Review* 17.1 (1998): 74-92. Web. Jun. 2011.

_____."Learning to Inhabit Writing." *Composition Studies* 29.1 (2001): 51-62. Web. Feb. 2012.

Mauk, Johnathon. "Location, Location, Location: The 'Real' (E)states of Being , Writing, and Thinking in Composition." *Relations, Locations, Positions: Composition Theory for Writing Teachers*. Peter Vandenberg, Sue Hum, and Jennifer Clary-Lemon, eds. Urbana: National Council of Teachers of English, 2006. Print. 198-225.

Marshall, T. H. "Citizenship and Social Class." *Citizenship and Social Class*. T. H. Marshall, and T. B. Bottomore. London: Pluto Press, 1992. Print.

McCullough, Malcolm. *Digital Ground: Architecture, Pervasive Computing, and Environmental Knowing*. Cambridge, MA: MIT, 2005. Print.

McGonigal, Jane. "Gaming Can Make a Better World." *TED: Technology, Entertainment, Design.* Feb. 2010. Web. Oct. 2011.

_____. *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*. New York: Penguin, 2011. Print.

McLuhan, Marshall. *Understanding Media: The Extensions of Man*. Ed. W. Terrence Gordon. Critical ed. Corte Madera, CA: Ginko, 2003. Print.

The Mentor. "The Hacker Manifesto." 8 Jan. 1986. Web. Feb. 2012.

Miller, Arthur B. "Rhetorical Exigence." *Philosophy and Rhetoric* 5.2 (1972): 111-118. Web. Jul. 2010.

Miller, Carolyn R. "What Can Automation Tell Us About Agency." *Rhetoric Society Quarterly* 37.2 (2007): 137-157. Web. Sept. 2011.

Mitchell, William J. T. *City of Bits: Space, Place, and the Infobahn*. 1995. Cambridge, MA: MIT Press, 1996. Print.

Mota, Catarina. “The Rise of Personal Fabrication.” *C&C ’11*. 3-6 Nov. 2011, Atlanta, GA. Web. Mar. 2012.

Muckelbauer, John. *The Future of Invention: Rhetoric, Postmodernism, and the Problem of Change*. Albany: State University of New York P, 2008. Print.

Olson, Charles, and Robert Creeley. *Selected Poems*. Berkeley: U of California P, 1993. Print.

“One Coffee Cup a Day: 30 Days 30 Cups.” *Cunicode: Design for 3D Print / Creative Fabrication*. 2012. Web. Feb. 2012.

Ostwald, Michael. “Virtual Urban Futures.” *The Cybercultures Reader*, 1st ed. Ed. David Bell and Barbara Kennedy, eds. London: Routledge, 2000. 658-675. Print.

Pack, Alexander. “The Smithsonian Utilizes Recent Strides In 3D Technology.” *The Creators Project*, 24 Feb. 2012. Web. Feb. 2012.

Pahlka, Jen. Interviewed by Tasneem Raja. *Mother Jones* May/June (2012): 55-7. Print.

Pettis, Bre. Interviewed by Stephen Colbert. *The Colbert Report,* Jun. 2011. Web. Feb. 2012.

Photosynth. Microsoft, Co. nd. 2012. Web. Nov. 2011.

“The Photosynth Photography Guide.” *Photosynth*. Microsoft, Co. 2010 Web. Nov. 2011.

“Physibles.” The Pirate Bay. 2012. Web. Feb. 2012.

Pickering, Andrew. *The Mangle of Practice: Time, Agency, and Science*. Chicago: University of Chicago Press, 1995. Print.

“Posts Tagged ‘Banksy.’” *Detroit Fun*k. 10 Oct. 2010. Web. Jun 2011.

Powell, Richard. *Wabi Sabi for Writers*. Avon, MA: Adams Media, 2006. Print.

Reynolds, Nedra. "Composition's Imagined Geographies: The Politics of Space in the Frontier, City, and Cyberspace." *Relations, Locations, Positions: Composition Theory for Writing Teachers*. Peter Vandenberg, Sue Hum, and Jennifer Clary-Lemon, eds. Urbana: National Council of Teachers of English, 2006. Print. 226-257.

_____. *Geographies of Writing: Inhabiting Places and Encountering Difference*. Carbondale: Southern Illinois UP, 2004. Print.

Ricci, David M. *Good Citizenship in America*. *Good Citizenship in America*. Cambridge, UK: Cambridge UP, 2004. Print.

Rice, Jeff. "21st Century Graffiti: Detroit Tagging." *CTheory: 100 Days of Theory*. Arthur and Marilouise Kroker, eds. 7 Jun. 2005. np. Web. Sept. 2011.

Rufo, Kenneth, and R. Jarrod Atchison. "From Circus to Fasces: The Disciplinary Politics of Citizen and Citizenship." *The Review of Communication* 11.3 (2011): 193-215. Web. Nov. 2011.

Russell, Ben. "Headmap Manifesto." 1999. Web. Apr. 2010.

Saco, Diana. *Cybering Democracy: Public Space and the Internet*. Minneapolis: U of Minnesota P, 2002. Print.

Sandercock, Leonie. *Towards Cosmopolis: Planning for Multicultural Cities*. Chichester: John Wiley, 1998. Print.

Schön, Donald A. *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic, 1983. Print.

Scollon, Ron, and Suzie Wong Scollon. *Discourses in Place: Language in the Material World*. London: Routledge, 2003. Print.

Shapeways. Shapeways, 2012. Web. Feb 2012.

Shaviro, Steven. *Connected, or What It Means to Live in the Network Society*. Minneapolis: University of Minnesota, 2003. Print.

Snavely, Noah, Raul Garg, Steven Seitz, and Richard Szeliski. "Finding Paths Through the World's Photos." *ACM Transactions of Graphics* 27 Aug. 2008. Web. Jan. 2012.

Sobocinski, Melanie Grunow, ed. *Detroit and Rome: Building on the Past.* Dearborn, MI: University of Michigan-Dearborn, 2005. Print.

Soja, Edward W. *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places*. Cambridge, MA: Blackwell, 1996. Print.

Solnit, Rebecca. "Detroit Arcadia: *Exploring the Post-American Landscape*." *Harper's Magazine (*Jul. 2007): 65-73. Web. Oct. 2009

Souza e Silva, Adriana. "From Cyber to Hybrid : Mobile Technologies as Interfaces of Hybrid Spaces." *Space and Culture* 9.3 (2006): 261-278. Web. May 2011.

Stack Exchange. Stack Exchange: Expert Answers to Your Questions. 2012. Web. Feb 2012.

Stiegler, Bernard. *For a New Critique of Political Economy*. Cambridge, UK: Polity, 2010. Print.

Stephenson, Neal. *The Diamond Age*. New York: Bantam Dell, 1995. Print.

Street Art View. 2012. Web. May 2012.

Thingiverse. MakerBot Industries, 2012. Web. Feb. 2012.

Townsend, Anthony. "Locative-Media Artists in the Contested-Aware City." *Leonardo* 39.4 (2006): 345-347. Web. 25 Apr. 2010.

Treviranus, Jutta. “The Value of Imperfection: the Wabi-Sabi Principle in Aesthetics and Learning.” *Open ED 2010 Proceedings*. Barcelona, Spain. 2010. Web. Apr. 2012.

Urry, John. *Mobilities*. Oxford: Polity, 2007

Vatz, Richard. “ The Myth of the Rhetorical Situation.” *Philosophy and Rhetoric* 6.3 (1968): 154-161. Web. May. 2010.

Vinge, Vernor. *Rainbows End*. New York: Tor, 2006. Print.

Virilio, Paul. *The Lost Dimension*. Trans. Daniel Moshenberg. Paris: Semiotext(e), 1991. Print.

Wagner, Aleksandra. “Introduction: The Nature of Demand.” *Radical Reconstruction*. By Lebbeus Woods. New York: Princeton Architectural Press, 1997. Print.

“Want to Steal a Banksy?” *Art Series Hotel Group* Dec. 2011. Web. May 2012.

Watson, Matthew, and Elizabeth Shove. “Product, Competence, Project and Practice: DIY and the Dynamics of Craft Consumption.” *Journal of Consumer Culture* 8.1 (2008), 69-89. Web. May 2012.

Weinberg, Michael. “It Will Be Awesome If They Don’t Screw It Up: 3D Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology.” *Public Knowledge.* Nov. 2010. Web. Jan. 2011.

Wellman, Barry. “Physical Place and Cyberplace: The Rise of Personal Networking.” *International Journal of Urban and Regional Research* 25.2 (2001), 227-252. Web. May 2012.

Wiener, Norbert. *The Human Use of Human Beings: Cybernetics and Society*. Garden City, New York: Doubleday, 1954. Print.

Wilson, Elizabeth. “The Rhetoric of Urban Space.” New Left Review I.209 (1995), 146-160. Web. Jan. 2012.

Woods, Lebbeus. *Pamphlet Architecture 15: War and Architecture*. New York: Princeton Architectural Press, 1993. Print.

_____. *Radical Reconstruction*. New York: Princeton Architectural Press, 1997. Print.

_____. *The Storm and the Fall*. New York: Princeton Architectural Press, 2004. Print

Williams, Raymond. *Keywords: A Vocabulary of Culture and Society, Revised Edition*. 1976. New York: Oxford UP, 1985. Print.

ABSTRACT

FLICKERING CITIES: MULTIMEDIA CITY FABRICS AND THE CHANGING NATURE OF CITIZENSHIP

by

ANDREW ENGEL

August 2012

Advisor: Richard Marback

Major: English

Degree: Doctor of Philosophy

How do the multiple media in cities today cause us to rethink the constructions and locations of our artifacts and their effects on us? In this dissertation, I argue that city artifacts, and by extension cities themselves, exist as multiple iterations scattered across the whole range of the media spectrum. The new persuasive potential of these iterations in their different media necessitate a turn to "post-urban" city fabrics, and these new fabrics are expansion and re-expression of the urban in unexpected media. Therefore, we must work to acknowledge and take advantage of the ways cities "flicker" as their artifacts are repeated across the various languages, contexts, communities, and media that make up cities today.

"Chapter 1: Exploded Artifacts" examines a piece of graffiti that appeared in Detroit by the street artist Banksy. The different iterations of this artifact are distributed across different media spaces and seem to demonstrate a sense of diffusion about the city that gets drawn back together when we examine how these iterations affect one another.

"Chapter 2: Collapsed Artifacts" takes up *Photosynth*, a tool for digitally stitching together photographs and producing 3D models that viewers can walk-through and

annotate. Once the model is created, individual experiences and media seem to get "collapsed" into what appears to be a "complete" artifact that needs to be pulled apart to have its separate iterations, and their affordances, exposed.

"Chapter 3: On-Demand Artifacts" explores 3D printing technology, which uses an additive layering process to create 3D objects from computer models. The potential for perfection with 3D printing further exacerbates the strained relationship between media and mobility in cities, and iterations of this artifact expose the necessity for deep reflection that is demanded from its users.

The Conclusion, "Flickering Citizenships," examines how our understanding of citizenship has adapted to the multiple and iterative nature of our cities such that today citizenship itself is also iterative. The artifacts with which we choose to engage persuade, challenge, and inspire us, and as such they determine the expectations and limitations of our civic action.

AUTOBIOGRAPHICAL STATEMENT

I am a product of the American Rust Belt: undergraduate work in Architecture in St. Louis, childhood and graduate work in English and Media in Milwaukee, and doctoral work in Rhetoric and Media in Detroit. After my undergraduate work, I joined the Peace Corps and served in Jamaica, where I worked with families in my rural community and with Habitat for Humanity. I am most interested in the relationships between physical and digital spaces in cities—their expectations and limitations—and how our capacity for understanding ourselves is changing in response to these relationships. In the fall of 2012, I will begin teaching courses in writing, rhetoric, and media as Assistant Professor of English at Wiley College in Marshall, Texas.